LAW OFFICES OF
MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.
A PROFESSIONAL LIMITED LIABILITY COMPANY
ONE MICHIGAN AVENUE, SUITE 900
LANSING, MICHIGAN 48933-1609

SIDNEY T. MILLER (1864-1940)
GEORGE L. CANFIELD (1866-1928)
LEWIS H. PADDOCK (1866-1935)
FERRIS D. STONE (1882-1945)

ANN ARBOR, MICHIGAN
BLOOMFIELD HILLS, MICHIGAN
DETROIT, MICHIGAN
GRAND RAPIDS, MICHIGAN
KALAMAZOO, MICHIGAN
LANSING, MICHIGAN
MONROE, MICHIGAN

NEW YORK, N.Y.
WASHINGTON, D.C.

AFFILIATED OFFICES:
PENSACOLA, FLORIDA
ST. PETERSBURG, FLORIDA
GDAŃSK, POLAND
WARSAW, POLAND

TELEPHONE (517) 487-2070
FAX (517) 374-6304

STEVEN E. CHESTER
(517) 483-4904

February 5, 1997

Ms. Barb Rosenbaum
Environmental Enforcement Specialist
MDEQ
Air Quality Division
333 South Capitol Avenue
Suite 200, Town Center
Lansing, MI 48933

Re: The Regulation of Odors Under Michigan SIP

Dear Barb:

As we've previously discussed, I have done some research on the issue of odor regulation under Federal Clean Air Act (CAA) and Michigan State Implementation Plan (SIP). Based on my review, it is my opinion that odors are not regulated under the CAA or Michigan SIP.

Of significance, the United States Environmental Protection Agency (USEPA) has repeatedly stated, odors are not regulated under the Clean Air Act. The Agency made this point explicitly and unequivocally in May, 1993 when it approved portions of the Wayne County Air Pollution Control Ordinance of 1985 for inclusion in the Michigan State Implementation Plan (SIP). As part of the final rulemaking, USEPA took no action on the odor intensity scale set forth in Section 802 of the County Ordinance. In refusing to approve Section 802 as part of the Michigan SIP, USEPA reasoned that "the Clean Air Act does not contain provisions for the regulation of odor and there are no national ambient air quality standards which regulate odor." See 58 Fed Reg 28359 (May 13, 1993) (emphasis added), included as Attachment 1.

USEPA repeatedly has articulated its view that odors are not regulated under the CAA. Recently, in September, 1996, the Agency removed an odor control regulation inadvertently approved as part of the Wyoming SIP because the rule did not have "a reasonable

connection to the national ambient air quality standards (NAAQS) and related air quality goals of the Clean Air Act." 61 Fed Reg 47058 (September 6, 1996). Additionally, in June, 1996, USEPA struck an odor rule from the Puerto Rican SIP noting that "it is EPA policy that no odor regulations be included in SIPs because there is no NAAQS specifically for odor." 61 Fed Reg 31885, 31887 (June 21, 1996) (emphasis added). Also, in May, 1996, in response to a comment on the Ohio SIP, USEPA stated that "the Clean Air Act (CAA) does not provide specific requirements for companies to control odors. Odor is not an issue pertinent to the ozone standard or the attainment of that standard." 61 Fed Reg 20458, 20462 (May 7, 1996) (emphasis added).

In May, 1995, USEPA removed certain odor regulations from the Minnesota SIP agreeing with Minnesota that "these regulations were not intended for purposes of achieving air quality standards or other Clean Air Act purposes and remain unnecessary for such purposes." 60 Fed Reg 27411 (May 24, 1995). Similarly, in August, 1994, USEPA refused to approve the State of Washington's odor regulations for inclusion in the Washington SIP. 59 Fed Reg 44324, 44326 (August 29, 1994). Moreover, in January, 1994, USEPA declined to take action on Montana's odor regulations asserting "[t]hese odor provisions do not have a reasonable connection to the NAAQS-related air quality goals of the Clean Air Act." 59 Fed Reg 2537, 2539 (January 18, 1994). See Attachment 2 for excerpts from the above-referenced Federal Register statements.

USEPA has long held the view that state odor regulations are not covered by, and do not further the goals of, the Clean Air Act. In its implementation of the 1970 Clean Air Act, USEPA made clear it had no intention of listing odors as a criteria pollutant. See Air Program Strategy for Attainment and Maintenance of Ambient Air Quality Standards and Control of Other Pollutants, USEPA 1977. As part of the 1977 Amendments to the Act, Congress directed USEPA to revisit this issue and to study the health affects of odors and the feasibility of regulating odors under the Clean Air Act. In a February 1980 report to Congress, USEPA recommended against the regulation of odors under the Clean Air Act. In so doing, the Agency reasoned, in part, that, "since odor perception is quite subjective, nuisance law, initiated by citizen complaints, appears to be an appropriate mechanism for dealing with odor problems." See Attachment 3, Regulatory Options for the Control of Odors, p. 2 (February 1980) (emphasis added). The USEPA evaluated and rejected the feasibility of national ambient air quality standards, new source performance standards (NSPS), and national emission standards for hazardous air pollutants (NESHAPs) for odors. The conclusions of the report, in my view, are compelling.

As documented above, USEPA has been unequivocal in asserting that odors are not regulated under the Clean Air Act. Despite the Agency's consistency on this point, and the overwhelming published pronouncements reaffirming this point, we understand that USEPA, Region V is now asserting to the MDEQ-AQD that it has the authority to regulate odors in Michigan. Simply put, there is no legal or factual support for this position. In addition to USEPA's public statements on this issue, three prominent cases discuss the regulation of odors under the Clean Air Act. These cases are Concerned Citizens of Bridesburg v USEPA, 836 F2d 777 (3rd Cir, 1987); Save Our Health Organization v Recomp of Minnesota, Inc., 37 F3d 1334 (8th Cir, 1994); and Cate v Transcontinental Gas Pipeline Corp., 904 F Supp 526 (WD VA 1995).

Several significant observations are in order when reviewing these cases. First, USEPA was not a plaintiff seeking to enforce an odor regulation in any of the cases. Rather, the Agency's view cited consistently in each case is that odors are not regulated under the Clean Air Act. In fact, in Bridesburg, USEPA argued it could rescind certain odor regulations inadvertently approved as part of the Pennsylvania SIP because these rules had no connection to the achievement of any national air quality standard (NAAQS). Second, in the Cate and Recomp cases, the plaintiffs failed in their bids to enforce odor regulations under the Clean Air Act. Third, and most importantly, in Bridesburg and Recomp, the courts declined to rule on the substantive claim that USEPA lacked statutory authority to approve odor regulations as part of any SIP, and decided each case on alternative grounds. See Bridesburg, 836 F2d at 779; and Recomp, 37 F3d at 1336, n3.

As best we can guess, USEPA, Region V may be relying on the Bridesburg case to argue that it inadvertently approved an odor regulation as part of the Michigan SIP and, consequently, the Agency may enforce this provision under the Clean Air Act. However, this argument is without legal or factual substance. A review of the applicable administrative record confirms that USEPA has never approved a regulation to control odors as part of the Michigan SIP. As you know, Rule 901 is the current rule applicable to the regulation of odors in Michigan. In 1980, the MDEQ-AQD submitted Rule 901, along with other rules, to USEPA for inclusion in the Michigan SIP. At that time, MDEQ-AQD proposed to delete former Rule 46 and replace it with Rule 901 because the newer rule contained "wording based on advice contained in a recent Michigan Court of Appeals ruling, which found the language contained in the former nuisance regulation [Rule 46] to be inadmissibly vague." See Attachment 4, p. 9-5 to 9-6 (emphasis added).

In final rulemaking on the 1980 SIP submittal, however, USEPA expressly stated it was only approving those rules relied on as part of Michigan's control strategy for criteria pollutant non-attainment areas. See 45 Fed Reg 29790, 29791 (middle column) (May 6, 1980) included as Attachment 5. Rule 901, which had no relationship to Michigan's control strategy for non-attainment areas, was neither referenced by USEPA, nor approved by the Agency as part of the Michigan SIP. Id.

USEPA might claim that old Rule 46 is still part of the Michigan SIP, and that it provides a basis for regulating odors. This argument is similarly without merit. Michigan's original SIP submittal, which included Rule 46, was provided to USEPA in January 1972 and was entitled "Implementation Plan for the Control of Suspended Particulates, Sulfur Oxides, Carbon Monoxide, Hydrocarbons, Nitrogen Oxides, and Photochemical Oxidants in the State of Michigan." See Attachment 6. The plan, thus, was submitted to address criteria pollutants and not odors. It is important to remember that Rule 46 also applied to criteria air contaminants like particulate matter, and was not exclusively an odor abatement rule. See Attachment 7.

In its partial approval of the original Michigan SIP, USEPA made clear it was approving the SIP (as well as other state SIPs) for purposes of implementing, maintaining and enforcing the NAAQS. See 37 Fed Reg 10842 (May 31, 1972), included as Attachment 8. Specifically, USEPA stated that "all portions of State plans which are related to attainment and maintenance of national standards are approved unless specifically disproved herein." Id. at 10846. Consequently, to the extent Rule 46 is part of the Michigan SIP, it was approved by USEPA only as it applies to criteria pollutants and attainment of the NAAQS. The Agency never approved the rule for odor control purposes.[1]

---

[1]Even if USEPA, Region V could successfully argue Rule 46 was inadvertently approved for odor abatement purposes as part of the Michigan SIP--which it cannot--the enforceability of the rule is highly questionable. As noted above, Michigan specifically submitted Rule 901 to replace Rule 46 because the former rule had been found to be "inadmissibly vague." See Attachment 4. Moreover, USEPA has long held the view that it lacks legal authority to regulate odors under the Clean Air Act. For the Agency to now modify this position without first providing fair notice to the regulated community is a deprivation of due process of law. Under such circumstances, USEPA could not bring an enforcement action based on Rule 46. See General Electric Co. v EPA, 53 F3d 1324 (CA DC 1995); and U.S. v Trident Seafoods Corp.,

In sum, odors are not a criteria pollutant regulated under the Clean Air Act, and odor regulations cannot be legitimately included in any SIP.

After you have had a chance to review this correspondence and its attachments, please call me at your convenience if you would like to further discuss this matter.

Very truly yours,

MILLER, CANFIELD, PADDOCK AND STONE, P.L.C.

By_____
Steven E. Chester

LAFS1\51640.1\032825-00015

---

60 F3d 556 (CA 9, 1995).

58 FR 28359 printed in FULL format.

FEDERAL REGISTER
VOL. 58, No. 91

Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 52

[MI-5286; FRL-4619-9]

Approval and Promulgation of Implementation Plans; Michigan

58 FR 28359

DATE: Thursday, May 13, 1993

ACTION: Final rulemaking.

SUMMARY: USEPA is approving portions of the State of Michigan's local Wayne County Air Pollution Control Division (WCAPCD) regulations, submitted as a revision to the federally approved Michigan State Implementation Plan (SIP) for Wayne County. In addition, USEPA is taking Direct Final rulemaking action approving the portions of chapter 5 of the WCAPCD regulations that were submitted as a revision to the federally approved SIP for Wayne County. The WCAPCD's regulations of 1965, as amended, and submitted to USEPA in 1972, then resubmitted as part of the Appendix to the State of Michigan's April 25, 1979, SIP submittal, are part of the Michigan federally approved SIP. The subject of this action is a set of revisions to those WCAPCD regulations which was submitted to USEPA to be incorporated into the Michigan SIP. These revised WCAPCD regulations were adopted as Wayne County Law on November 18, 1985, and submitted to USEPA by the State of Michigan on October 10, 1986. On January 28, 1993, the State, at the request of Wayne County, withdrew portions of the Wayne County ordinance from the SIP submittal. USEPA is approving portions of these WCAPCD regulations as a supplement to the current federally approved Michigan SIP and is taking Direct Final rulemaking action on one other portion of the submittal. USEPA reviewed this submittal for conformance with the provisions of the Clean Air Act, as amended. USEPA has determined that this action conforms with those requirements even though that submittal preceded the date of enactment.

EFFECTIVE DATE: This final rulemaking becomes effective June 14, 1993 unless, within 30 days of its publication, notice is received that adverse or critical comments will be submitted. If the effective date is delayed, timely notice will be published in the Federal Register.

ADDRESSES: Copies of this revision of the Michigan SIP are available for

inspection at: U.S. Environmental Protection Agency, Jerry A. Kurtzweg, ANR-443, 401 M Street SW., Washington, DC 20460.

Copies of the SIP revision and other materials relating to this rulemaking are available for inspection at the following addresses: (It is recommended that you telephone John Mooney, at (312) 886-6043, before visiting the Region 5 office).

U.S. Environmental Protection Agency, Region 5, Air Toxics and Radiation Branch, 77 West Jackson, Chicago, Illinois 60604.

Michigan Department of Natural Resources, Air Quality Division, Stevens T. Mason Building, 530 West Allegan, Lansing, Michigan 48909.

Wayne County Health Department, Air Pollution Control Division, 2211 East Jefferson, Detroit, Michigan 48207.

FOR FURTHER INFORMATION CONTACT: John Mooney, (312) 886-6043.

SUPPLEMENTARY INFORMATION: What follows is a summary of USEPA's March 26, 1990 (55 FR 11029), proposed actions. A more detailed account of USEPA's action can be found in the proposed rule.

On March 26, 1990, USEPA proposed the following actions and solicited public comment on them:

1. Approval:

A. Chapter 1 -- Definitions

B. Chapter 2 -- General Provisions

C. Chapter 3 -- Enforcement

D. Chapter 5 -- Emission Limitations and Prohibitions: Particulate Matter, sections 503 and 504

E. Chapter 8 -- Emission Limitations and Prohibitions: Miscellaneous

E. Chapter 9 -- Sealing of Emissions Sources

F. Chapter 10 -- Variances

G. Chapter 11 -- Testing and Sampling

H. Chapter 12 -- Continuous Emission Monitoring and Recording

I. Chapter 13 -- Air Pollution Episodes

2. No Action:

A. Chapter 6 -- Emission Limitations and Prohibitions (which was not submitted to USEPA by the State)

B. Chapter 4 -- Air Use Approval and Permits

3. Disapproval:

A. Chapter 5 -- Emission Limitations and Prohibitions (proposed disapproval except for sections 503 and 504)

B. Chapter 7 -- Emission Limitations and Prohibitions: Existing and New Sources of Volatile Organic Compounds (VOCs)

Comments and Responses:

Only one set of comments was received, submitted by WCAPCD on May 25, 1990. WCAPCD's comments were limited to USEPA's proposed actions on Chapters 4, 5, and 7 of the Ordinance. WCAPCD requested, and was granted, an extension of the comment period in order to submit [*28360] more detailed comments following review of USEPA's technical support documents. However, no further comments were received. As noted above, on January 28, 1993, at the request of Wayne County, the State withdrew Chapters 4, 7, and 10 of the Ordinance from its submittal. In addition, at the request of Wayne County, the State is withdrawing portions of Chapter 5, section 501, of the Wayne County Ordinance which incorporate by reference the following parts of the State rules: (1) The quench tower limit in Rule 336.1331, Table 31, Section C.8, (2) the deletion of the limit in Rule 336.1331 for coke oven coal preheater equipment, and (3) Rule 336.1355. In addition, the County identified that in the notice of proposed rulemaking, USEPA mistakenly acted on sections 504 and 505 which were never adopted by the county and, therefore, were not included in the State's submittal. The following comment was submitted regarding chapter 5 of the ordinance.

Comment: "No reasons for [proposed disapproval of sections 501 and 502] were given. In light of the fact that section 501 incorporates by reference a number of State rules, [WCAPCD] is at a loss to understand why this section should not be approved."

Response: The technical support document of February 23, 1987, states that Michigan's Rules 301 and 331 (i.e. those used as the basis for sections 501 and 502 of the Wayne County rules), "have been determined by USEPA to be unapprovable." A fuller discussion of these State rules was provided in separate technical support documents located in the docket. The proposal to disapprove section 501 of the Wayne County Ordinance was based on this evaluation of the State rules being incorporated. Since the time of proposed rulemaking on the Wayne County Ordinance, the State rules have been further evaluated. Although technical support documents of 1986 and 1987 recommended, and a Notice of Proposed Rulemaking of 1989 proposed disapproval of some of the incorporated State rules, the reevaluation recommends approving most of these rules. As noted above, the State is withdrawing portions of section 501 of the Wayne County Ordinance. As a result, the remaining parts of Chapter 5 of the Wayne County Ordinance are now approvable. These issues are discussed in more detail in the rulemaking portion of this notice.

USEPA's Final Rulemaking Actions

Based on USEPA's proposed actions on March 26, 1990, USEPA is taking final action on the following regulations.

1. Approval:

A. Chapter 1

B. Chapter 2

C. Chapter 3

D. Chapter 5 -- section 503

E. Chapter 8 -- except section 802

F. Chapter 9

G. Chapter 11

H. Chapter 12

I. Chapter 13

2. No Action:

A. Chapter 8 -- Section 802 -- USEPA is not taking action on this Section at this time because the Clean Air Act does not contain provisions for the regulation of odor and there are no National Ambient Air Quality Standards which regulate odor.

In addition, USEPA is taking final approval action, as described below, for two other parts of the State's submittal.

3. Direct Final Rulemaking -- Chapter 5

A. Sections 501 and 502 -- USEPA expects no adverse public or congressional reaction resulting from approval of this portion of the SIP revision. The State of Michigan is aware that USEPA plans to approve this portion of the revision and process it under the Direct Final procedures. The State of Michigan concurs with this decision. USEPA is publishing this action without prior proposal because the Agency views this as a noncontroversial amendment and anticipates no adverse comments. These same provisions have been previously approved by USEPA as revisions to Michigan's State Implementation Plan. This portion of USEPA's rulemaking action will be effective July 12, 1993, unless, within 30 days of publication, notice is received that adverse or critical comments will be submitted bearing solely on this finding that Chapter 5 satisfies the 1981 federally enforced criteria for TSP Part D SIP requirements. If such notice is received, the action on section 501 and 502 of Chapter 5 of this submittal will be withdrawn before the effective date by publishing two subsequent notices. One notice will withdraw the final action and the other will begin a new rulemaking by announcing a proposal for the action and establishing a comment period. If no such comments are received, the public is advised that this action will be effective July 12, 1993.

4. Final Approval Action on Appendices

A. Appendices A and D -- USEPA's notice of proposed rulemaking did not directly specify rulemaking action for the appendices, however, action was proposed indirectly by proposing action on the chapters that incorporate the appendices by reference. The appendices were also discussed more explicitly in the technical support documents for the proposal. USEPA did not directly specify any rulemaking action with regard to appendices A, B, C, D, and E, which were part of the original State submittal. Since the time of the original submittal, the State has withdrawn those Chapters that referenced appendices B, C, and E. The Agency's action on a SIP submittal is rulemaking that is subject to the procedural requirements of the Administrative Procedures Act (APA). Under the good cause exception to the rulemaking requirement, section 553(b)(B), however, the Agency need not provide notice and an opportunity for comment if the Agency for good cause determines that notice and comment are "impracticable, unnecessary, or contrary to the public interest."

Notice and comment are impracticable and unnecessary in the present circumstance. Although USEPA did not directly propose approval of the appendices, USEPA proposed action on the rules that incorporate these appendices by reference.

Therefore, since USEPA did indirectly propose action on these appendices, and any review of the effect of the proposed rules would necessarily involve review of the appendices, USEPA believes that it is unnecessary to propose separate action on the appendices. In addition, it is impracticable for the Agency to take such action because, in light of the statutory time constraints on acting on SIPs, such a process would divert valuable agency resources from action on the large number of SIPs on which USEPA has not had an opportunity to propose and take final action. Therefore, USEPA is taking final action on these appendices in this action. In this manner, USEPA is approving appendices A and D.

This action has been classified as a Table One action by the Regional Administrator, under the procedures published in the Federal Register on January 19, 1989, (54 FR 2214-2225).

The Office of Management and Budget has exempted this rule from the [*28361] requirements of section 3 of Executive Order 12291.

Pursuant to the provision of 5 U.S.C. 605(b), I certify that this action will not have a significant economic impact on a substantial number of small entities because it merely approves or disapproves for Federal purposes rules that are already in effect and enforceable at the county level.

The Agency has reviewed this request for the revision of the Federally-approved State Implementation Plan for conformance with the provisions of the 1990 Amendments enacted on November 15, 1990. The Agency has determined that this action conforms with those requirements irrespective of the fact that the submittal preceded the date of enactment due to the fact that the WCAPCD ordinance does not constitute a relaxation of the existing local or State rules.

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United State Court of Appeals for the appropriate circuit by July 12, 1993. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule

for the purposes of judicial review nor does it extend the time within which a petition for judicial rule may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2)).

List of Subjects in 40 CFR Part 52

Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Ozone, Particulate matter, Sulfur dioxide.

Note -- Incorporation by reference of the State Implementation Plan for the State of Michigan was approved by the Director of the Federal Register on July 1, 1982.

Dated: April 26, 1993.

Carol Browner,

Administrator.

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is amended as follows.

PART 52 -- APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401-7671q.

Subpart X -- Michigan

2. Section 52.1170 is amended by adding paragraph (c)(92) to read as follows:

§ 52.1170. -- Identification of plan.

* * * * *

(c) * * *

(92) On October 10, 1986, the State of Michigan supported portions of the revised Wayne County Air Pollution Control Division Air Pollution Control Ordinance as approved by Wayne County on September 19, 1985, as a revision to the Michigan State Implementation Plan.

(i) Incorporation by reference.

(A) Chapters 1, 2, 3, 5 (except for the portions of Chapter 5, section 501, of the Wayne County Ordinance which incorporate by reference the following parts of the State rules: The quench tower limit in Rule 336.1331, Table 31, Section C.8; the deletion of the limit in Rule 336.1331 for coke oven coal preheater equipment; and Rule 336.1355), 8 (except section 802), 9, 11, 12, 13 and appendices A and D of the Wayne County Air Pollution Control Division (WCAPCD) Air Pollution Control Ordinance as approved by WCAPCD on September 19, 1985.

[FR Doc. 93-11336 Filed 5-12-93; 8:45 am]

BILLING CODE 6560-50-P

61 FR 31885 printed in FULL format.

FEDERAL REGISTER
Vol. 61, No. 121

Proposed Rules

ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 52

[Region II Docket No. 150, PR4-1, FRL-5523-9]

Approval and Promulgation of Implementation Plans; Commonwealth of Puerto
Rico

61 FR 31885

DATE: Friday, June 21, 1996

ACTION: Proposed rule.

To view the next page, type .np* TRANSMIT.
To view a specific page, transmit p* and the page number, e.g. p*1

SUMMARY: EPA is proposing approval of revisions to the Puerto Rico Regulations for the Control of Atmospheric Pollution, submitted to EPA by the Puerto Rico Environmental Quality Board (EQB) on September 29, 1995. This action proposes approval of revisions to Rules 102, 105, 106, 107, 109, 110, 111, 112, 114, 117, 121, 201, 203, 204, 205, 206, 209, 211, 301, 401, 402, 403, 404, 405, 406, 408, 409, 410, 412, 413, 414, 417, and 501. EPA is not incorporating new Rule 422 into the federally approved Puerto Rico State Implementation Plan (SIP). EPA is also announcing the withdrawal of Rules 411, 418, 419, 420 and 421 from the Puerto Rico SIP at the request of the EQB. However, although requested by the EQB, EPA is not withdrawing Rule 404 from the SIP. A revision to Rule 423 was also submitted by the EQB on September 29, 1995, however, EPA determined the revision to Rule 423 to be administratively incomplete and returned it to EQB and it, therefore, is not included in this rulemaking.

DATES: Comments must be received on or before July 22, 1996.

ADDRESSES: All comments should be addressed to: William S. Baker, Chief, Air Programs Branch, Environmental Protection Agency, Region II Office, 290 Broadway, New York, New York 10007-1866.

Copies of the Commonwealth's submittal(s) are available at the following addresses for inspection during normal business hours:

Environmental Protection Agency, Region II Office, Air Programs Branch, 290 Broadway, 20th Floor, New York, New York 10007-1866

61 FR 20458 printed in FULL format.

FEDERAL REGISTER
Vol. 61, No. 89

Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Parts 52 and 81

[OH92-1 & OH79-3; FRL-5458-8]

Approval and Promulgation of Implementation Plans and Designation of Areas for Air Quality Planning Purposes; Ohio

61 FR 20458

DATE: Tuesday, May 7, 1996

ACTION: Final rule.

SUMMARY: The USEPA is determining that the Cleveland-Akron-Lorain (CAL) ozone nonattainment area (which includes the Counties of Ashtabula, Cuyahoga, Geauga, Lake, Lorain, Medina, Portage and Summit) has attained the public health-based National Ambient Air Quality Standard (NAAQS) for ozone. This determination is based upon three years of complete, quality-assured, ambient air monitoring data for the 1993 to 1995 ozone seasons that demonstrate that the ozone NAAQS has been attained in each of these areas. On the basis of this determination, USEPA is also determining that certain reasonable-further-progress (RFP) and attainment demonstration requirements, along with certain other related requirements, of Part D of Title 1 of the Clean Air Act (CAA) are not applicable to the Cleveland-Akron-Lorain area.

In another part of this rulemaking, the USEPA is approving the Ohio Environmental Protection Agency (OEPA) request to revise the official designation of the Cleveland-Akron-Lorain (CAL) area as an area that is meeting the ozone air quality standard. The USEPA is also approving the CAL area maintenance plan as a revision to Ohio's State Implementation Plan (SIP) for ozone. The purpose of the maintenance plan is to provide for continued good ozone air quality levels in the area over the next 10 years.

EFFECTIVE DATE: This final rule is effective on May 7, 1996.

ADDRESSES: Copies of the determination of attainment, redesignation requests, public comments on the rulemaking, and other materials relating to this rulemaking are available for inspection at the following address: (It is recommended that you telephone William Jones at (312) 886-6058, before visiting

September 29, 1995 SIP submittal, EPA considers these revisions as a SIP revision to the Puerto Rico PM[10] SIP for the Municipality of Guaynabo. In a May 31, 1995 Federal Register notice (60 FR 28333), EPA approved Rule 423 as part of the Puerto Rico PM[10] SIP for the Municipality of Guaynabo.

In a February 5, 1996 letter to Hector Russe Martinez, Chairman of the EQB, EPA determined that revised Rule 423 is administratively incomplete and returned it to the Commonwealth of Puerto Rico. Therefore, Rule 423 is not included in this rulemaking.

In addition, included in Puerto Rico's September 29, 1995 SIP revision submittal EQB requested that EPA withdraw Rule 404 "Fugitive Emissions" from the Puerto Rico SIP. However, Rule 404 was submitted on November 15, 1993 to EPA as part of the Puerto Rico PM[10] SIP for the Municipality of Guaynabo and approved by EPA on May 31, 1995 (60 FR 28333). EQB demonstrated in the PM[10] SIP that Rule 404 was needed to attain and maintain the PM[10] NAAQS. EQB's September 29, 1995 request to withdraw Rule 404 did not include technical support or a demonstration that Rule 404 is no longer needed to attain and maintain the PM[10]NAAQS. Therefore, EPA is not withdrawing Rule 404 from the SIP.

IV. Request that Certain Rules of the Regulations be Withdrawn From the Puerto Rico SIP

EQB requested in their September 29, 1995 SIP submittal, that certain rules currently included in the federally approved Puerto Rico SIP be withdrawn from the SIP since these rules are not a part of Puerto Rico's strategy to achieve and maintain compliance with the NAAQS. The rules requested to be withdrawn include Rule 404 "Fugitive Emissions", Rule 411 "Hydrogen Sulfide", Rule 418 "Waste Gas Disposal", Rule 419 "Volatile Organic Compounds", Rule 420 "Objectionable Odors", and, Rule 421 "Increments Of Progress." Rule 424 "Roof Surface Coating" is an entirely new regulation which EQB provided for information but is not to be part of the SIP. Rule 424 will be enforced by Puerto Rico. EPA agrees that all the above rules except [*31888] Rule 404 should be withdrawn from the SIP. None of these rules has a direct impact on NAAQS pollutants and, therefore, will not affect the attainment or maintenance plans which have been approved. It should also be noted that it is EPA policy that no odor regulations be included in SIPs because there is no NAAQS specifically for odor. EPA is proposing approval of Puerto Rico's request to withdraw Rules 411, 418, 419, 420, and 421 from the SIP. These rules, however, will remain enforceable by Puerto Rico.

V. Regulations Concerning HAPs which were Approved Pursuant to Section 112(l) of the Clean Air Act

Section 112(l) of the Act enables Puerto Rico to develop a program for the implementation and enforcement of HAP emissions standards. Approval by EPA of such program would provide for the delegation of the EPA Administrator's authorities and responsibilities to implement and enforce the HAP emissions standards to Puerto Rico. Puerto Rico has revised Rule 211 of the Puerto Rico Regulations pursuant to section 112(l) of the Act in order to provide sources with a mechanism to limit potential HAP emissions.

EPA can only approve a program under 112(l) if Puerto Rico meets the following criteria: (1) adequate authority to assure compliance with any section

the redesignation of the Cleveland-Akron-Lorain area to attainment of the ozone standard, including attainment of the ozone NAAQS. It is not clear that further reduction in ozone levels will provide significant health improvements.

With regard to a revised ozone standard, it should be noted that the USEPA along with States and science advisors, is the process of reconsidering the ozone standard. If the ozone standard is revised a number of ozone attainment and nonattainment areas may be affected. A redesignation of Cleveland-Akron-Lorain to attainment at this time will not prevent this area from being redesignated to nonattainment if it is subsequently found to be in violation of a revised ozone standard. Until the NAAQS is revised, however, the 0.12 ppm NAAQS for ozone is the only appropriate standard against which to judge attainment.

(2) Comment: People in the Cleveland-Akron-Lorain area suffer from sinus problems, and increased occurrence of asthma and other life-threatening respiratory illnesses that are directly attributable to air pollution. The air is often oppressive and really unbreathable, especially in the kind of hot, humid weather that the area has experienced this summer. Infants and the elderly
are affected by the higher tolerance of ozone levels now in force. We see people who become ill from polluted air whenever the ozone level rises. The current ozone standard is not health based. We want to breathe cleaner air. We are opposed to the redesignation of Cleveland-Akron-Lorain because of the asthma epidemic and increasing number of asthma deaths. The pervasiveness of the health threat posed far outweighs the inhibition of industrial expansion and limits on smokestack pollution. [*20464]

(2) Response: The current ozone standard is a health based standard. It was recently reviewed and reaffirmed, see 58 FR 13008 (March 9, 1995). However, the ozone NAAQS is currently being reviewed to see if the standard should be changed and what the new standard would be, see 59 FR 5164 (February 3, 1994). A staff report was recently released that discusses this review of the ozone NAAQS. But unless and until the ozone NAAQS is changed - it remains the standard to use for comparison against ozone monitoring data in the area. Those data indicates attainment of the ozone standard.

(3) Comment: In Cleveland-Akron-Lorain the air smells. There are also foul odors coming from factories during the early morning hours that are waking us up and making us nauseated.

(3) Response: At the Federal level the Clean Air Act (CAA) does not provide specific requirements for companies to control odors. Odor is not an issue pertinent to the ozone standard or the attainment of that standard. We have, however, made our enforcement group aware of these complaints to see what can be done. Further, existing facilities must continue to operate existing air pollution control equipment in accordance with applicable rules, regulations and permits, and sources that are problematic in terms of posing a nuisance to area residents may be referred to the State and local environmental enforcement staff for investigation.

(4) Comment: Several commenters expressed concern that trucks and buses pollute the air by blowing out black smoke and that cleaning up emissions from cars is not sufficient.

60 FR 27411 printed in FULL format.

FEDERAL REGISTER
Vol. 60, No. 100

Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 52

[MN30-1-6215a; FRL-5183-8]

Approval and Promulgation of Implementation Plans; Minnesota

60 FR 27411

DATE: Wednesday, May 24, 1995

ACTION: Direct final rule.

SUMMARY: Minnesota submitted a revision intended to simplify and update the rules in its State Implementation Plan (SIP). These revisions included deleting regulations that are redundant with Federal New Source Performance Standards (NSPS) regulations, removing odor regulations and other similar regulations from the SIP, and recodifying the regulations. In the case of open burning, the State requested removal of the regulations from the SIP or, in the alternative, replacing these regulations with statutes that regulate open burning. USEPA is replacing the open burning regulations in the SIP with the new statutes and is approving all other revisions requested by the State.

EFFECTIVE DATE: This action will be effective July 24, 1995 unless adverse or critical comments are received by June 23, 1995. If the effective date is delayed, timely notice will be published in the Federal Register.

ADDRESSES: Written comments should be addressed to: William L. MacDowell, Chief, Regulation Development Section, Air Enforcement Branch (AE-17J), United States Environmental Protection Agency, 77 West Jackson Boulevard, Chicago, Illinois 60604.

Copies of the SIP revision request and U.S. EPA's analysis are available for public inspection during normal business hours at the following addresses: United States Environmental Protection Agency, Region 5, Air and Radiation Division, 77 West Jackson Boulevard (AE-17J), Chicago, Illinois 60604; and Jerry Kurtzweg (6102), United States Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

FOR FURTHER INFORMATION CONTACT: John Summerhays, Air Enforcement Branch, Regulation Development Section (AE-17J), United States Environmental Protection,

Region 5, Chicago, Illinois 60604, (312) 886-6067.
SUPPLEMENTARY INFORMATION:

I. Review of State Submittal

On November 23, 1993, the Minnesota Pollution Control Agency (MPCA) submitted a request to (1) eliminate a number of regulations that need not be included in the Minnesota State Implementation Plan (SIP), (2) recodify the remaining regulations, and (3) make miscellaneous other changes. Each of these types of revisions are discussed in separate sections below.

Elimination of Regulations

MPCA recommended elimination of several categories of regulations from the SIP. The category with the most regulations recommended for elimination are regulations that repeat the requirements for new sources established by the United States Environmental Protection Agency (USEPA) in various New Source Performance Standards (NSPS). Some of these regulations also govern emissions from "existing sources," i.e. sources that existed before the effective date of or otherwise not subject to a relevant NSPS. Most of these regulations were submitted in 1981. In its 1982 rulemaking on these regulations, USEPA approved these regulations only for "existing sources," reflecting concern that these regulations would either be unnecessary by virtue of being redundant with Federal NSPS or be detrimental by virtue of causing uncertainty as to which of conflicting State versus Federal provisions apply. In this context, "existing sources" should be considered not only to include sources that existed prior to the effective date of the NSPS but also to include sources that are newer but are not subject to the NSPS due to size or other reasons.

Minnesota's submittal refines the list of rules which, by USEPA's approach, should be removed from the SIP or applied only to "existing sources." In the cases of regulations for portland cement plants, asphalt concrete plants, grain elevators, sulfuric acid plants, and nitric acid plants, the State has specified which portions of the relevant sets of rules regulate new sources and which portions regulate existing sources. In the cases of regulations for lead smelters and brass and bronze plants, there are no existing brass or bronze plants and the only existing lead smelter is subject to a separate more stringent administrative order in the SIP. Therefore, the regulations apply only to new sources and should be eliminated from the SIP in their entirety. In the cases of regulations for incinerators and sewage sludge incinerators, MPCA does not identify portions of the rules that only apply to new sources but comments that USEPA should state that the SIP only includes these rules as they apply to existing sources (which again may include newly constructed sources that are not subject to NSPS). USEPA concurs with Minnesota's list of which of these rules should be removed from the SIP, and is modifying the SIP accordingly.

A second set of regulations recommended for elimination concern odors and acid/base fallout. MPCA's submittal states that these regulations were not intended for purposes of achieving air quality standards or other Clean Air Act purposes and remain unnecessary for such purposes. Specifically, Minnesota requests on this basis that USEPA delete the set of regulations entitled Ambient Odor Control, the set entitled Limits for Animal Matter Odors, and the set entitled Limits on Acid, Base Emissions. These regulations were adopted around 1970 and were submitted and approved as part of a package that included all

extant air pollution regulations. USEPA concurs with Minnesota's request and is removing these regulations from the SIP.

A third set of regulations recommended for elimination concern indirect sources. These regulations establish permitting requirements for the facilities such as highways, shopping malls, and airports that attract motor vehicles and thus indirectly cause mobile source emissions. These regulations were submitted in 1981 and approved by USEPA in 1982. [*27412] Nevertheless, section 110(a)(5)(A)(iii) of the Clean Air Act (added in 1977) states that "Any State may * * * suspend or revoke any [indirect source review program], provided the [implementation plan] meets the requirements of [section 110]." Minnesota is maintaining these regulations as State enforceable requirements, and will continue to implement indirect source review, but the State is seeking to remove these regulations from the federally enforceable SIP. The SIP has been found to meet the requirements of Section 110, and so the criteria in section 110(a)(5)(A)(iii) for removal of the indirect source regulations from Minnesota's SIP have been satisfied. Consequently, USEPA is removing these regulations from the SIP.

A final set of regulations recommended for elimination concern open burning. MPCA explained that the Minnesota Legislature rescinded these air pollution regulations and incorporated similar restrictions into legislation administered by the Minnesota Department of Natural Resources (DNR). MPCA argued that particulate matter emitted from open burning was not found to be significant in the State's development of plans to address the nonattainment areas, and argued that these regulations may be considered to be nuisance regulations rather than particulate matter regulations. Nevertheless, MPCA's submittal states "If the EPA does not approve the MPCA's request to remove the open burning program from the SIP, then the MPCA requests that the applicable portions of [the current statute that addresses open burning] be incorporated as part of Minnesota's SIP * * *."

Minnesota's open burning regulations generally prohibit open burning of leaves and other vegetative material, with exemptions for campfires and cooking and exemptions for certain types of burning which may be conducted upon receipt of a permit. Open burning causes emissions most notably of particulate matter and also of carbon monoxide, hydrocarbons, and air toxicants. MPCA has not attempted to analyze the ambient impact of eliminating these restrictions. Available evidence is limited but suggests that the impacts of open burning can be significant. Therefore, absent evidence to the contrary, USEPA finds that open burning should be retained as part of the Minnesota SIP. USEPA further finds that the alternative of revising the SIP by replacing the old regulations with the new statute is fully appropriate. The statute provides essentially the same or better air quality benefits insofar as it provides for more effective administration of similar restrictions. This alternative would remove the open burning program from "MPCA's regulatory program," as requested by MPCA. (This portion of the SIP would be administered by the Minnesota DNR.) Although Minnesota planned in any case to continue the open burning restrictions in force, this alternative would retain these restrictions as part of the Federal SIP, thereby retaining Federal authority to object should the State subsequently wish to end the restrictions. Therefore, USEPA is approving Minnesota's alternative of replacing MPCA regulations with State statutes.

Recodification

59 FR 44324 printed in FULL format.

FEDERAL REGISTER
VOL. 59, No. 166

Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 52

[WA-10-1-5830a; WA-21-1-6278a; FRL-5017-3]

Approval and Promulgation of Implementation Plans: Washington

59 FR 44324

DATE: Monday, August 29, 1994

ACTION: Final rule.

To view the next page, type .np* TRANSMIT.
To view a specific page, transmit p* and the page number, e.g. p*1

SUMMARY: Environmental Protection Agency (EPA) approves numerous amendments to Regulations I and II of the Puget Sound Area Pollution Control Agency's (PSAPCA) rules and the addition of Regulation III, for the control of air pollution in Pierce, King, Snohomish, and Kitsap Counties, Washington, as revisions to the Washington State Implementation Plan (SIP). In addition, EPA approves the part D New Source Review (Article 6) rules as they apply to PSAPCA's jurisdiction (Pierce, King, Snohomish, and Kitsap Counties). These revisions were submitted by the Director of the Washington State Department of Ecology (WDOE) on September 11, 1992 and October 20, 1993 in accordance with the requirements of section 110 and part D of the Clean Air Act (herein the Act) and superseded and replaced previously submitted rules by PSAPCA. In accordance with Washington statutes, PSAPCA rules must be at least as stringent as the WDOE statewide rules.

DATES: This final rule will be effective on October 28, 1994, unless adverse or critical comments are received by September 28, 1994. If the effective date is delayed, timely notice will be published in the Federal Register.

ADDRESSES: Written comments should be addressed to:

Montel Livingston, SIP Manager, Air Programs Branch (AT-082), EPA, Docket # WA10-1-5830 and WA21-1-6278, 1200 Sixth Avenue, Seattle, Washington 98101.

Documents which are incorporated by reference are available for public inspection at the Air and Radiation Docket and Information Center, EPA, 401 M Street, SW., Washington, DC 20460. Copies of material submitted to EPA may be examined during normal business hours at the following locations: EPA, Region 10, Air Programs Branch, 1200 Sixth Avenue (AT-082), Seattle, Washington 98101,

Regulation I-Deletions and Movement of Rules

Deletions: Sections 3.03 Investigations and Studies by the Control Officer; 3.12 Appeals from Board Orders; 3.13 Status of Orders on Appeal; 3.15 Interfering with or Obstructing Agency Personnel; 3.21 Service of Notice; 6.05 Information Required for Notice of Construction and Application for Approval; 6.11 Conditional Approval; 6.12 Time Limits; 8.05 Emission Standard Exemptions; and 9.02 Outdoor Fires. Provisions for appeals (previously section 3.11 Orders and Hearings) are now found under section 3.17 Appeal of Orders. Section 7.02 Filing Fees previously had been part of the EPA approved Washington SIP because it covered fees for more than just 7.01 Variances, which was not a part of the EPA approved SIP. However, now section 7.02 has been revised and renumbered as a part of the new Variance Article and EPA will be taking no action on both the variance provision and the filing fee provision. Provisions for emission standard exemptions and outdoor fires are now found under Article 8 Outdoor Fires.

Regulation II-Deletions and Movement of Rules

Deletion: Section 2.13 Schedule of Control Dates. Provisions for Solvent Metal Cleaners (previously section 2.09) are now found under regulation III, section 3.05.

Deletions: Sections 3.02 High Vapor Pressure Volatile Organic Compound Storage in External Floating Roof Tanks; 3.11 Schedule of Compliance Dates; 4.01 Enforcement; and 4.03 Alternative Control Dates. Provisions for section 3.02 can now be found under section 2.04; provisions for Leaks from Gasoline Transport Tanks and Vapor Recovery Systems (previously section 3.03) can now be found under section 2.08; provisions for Perchloroethylene Dry Cleaning Systems (previously section 3.04) can now be found under Regulation III, section 3.03. Provisions [*44326] for enforcement may be found in Regulation I, section 3.15.

Under Washington statutes, rules of any local air pollution control authority must be at least as stringent as the statewide rules of the WDOE. Since EPA has already approved the statewide rules as meeting the requirements of the Act (July 27, 1993 (58 FR 4581)), with the exceptions described below, EPA is approving numerous amendments to the PSAPCA regulations I and II, and regulation III in their entirety.

Finally, EPA is taking no action on the following articles and sections which were included in the September 11, 1992 and October 8, 1993 submittals but have not been included in the Washington SIP in the past. Specifically, under Regulation I, EPA is taking no action on the following:

Article 4 Variances (all sections);

Article 9 Emission Standards

Section 9.10 Emission of Hydrochloric Acid; and

Section 9.12 Odor and Nuisance Control Measures.

III. Discussion of New Source Review Revisions

59 FR 2537 printed in FULL format.

FEDERAL REGISTER
VOL. 59, No. 11

Rules and Regulations

ENVIRONMENTAL PROTECTION AGENCY (EPA)

40 CFR Part 52

[MT9-1-6134 & MT13-1-6133; FRL-4807-5]

Clean Air Act Approval and Promulgation of PM sub 10 Implementation Plan for Montana

59 FR 2537

DATE: Tuesday, January 18, 1994

ACTION: Final rule.

SUMMARY: In this action, EPA approves the State implementation plan (SIP) submitted by the State of Montana to achieve attainment of the National ambient air quality standards (NAAQS) for particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM sub 10). The SIP was submitted by Montana to satisfy certain Federal requirements for an approvable moderate nonattainment area PM sub 10 SIP for Missoula. In this final rule, EPA also approves the Missoula City-County Air Pollution Control Program, except several rules regarding emergency procedures, permitting, open burning, wood-waste burners, new source performance standards, hazardous air pollutant standards, and variances. EPA will propose separate action on these rules when the State fulfills its related commitments. One commitment has been fulfilled (see the This Action section of this document for more information). If the State fails to fulfill the remainder of its commitments, EPA will take appropriate action. Further, EPA is declining to take action on Missoula's odor provisions.

EFFECTIVE DATE: This rule will become effective on February 17, 1994.

ADDRESSES: Copies of the State's submittal and other information are available for inspection during normal business hours at the following locations: Environmental Protection Agency, Region VIII, Air Programs Branch, 999 18th Street, Suite 500, Denver, Colorado 80202-2405; Montana Department of Health and Environmental Sciences, Air Quality Bureau, Cogswell Building, Helena, Montana 59620-0901; and Mr. Jerry Kurtzweg, ANR-443, Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.

As noted, EPA did not propose approval, nor is EPA taking final action, on some portions of the Missoula City-County Air Pollution Control Program regulations. To address EPA-identified deficiencies in the Missoula and statewide SIP, the State committed to complete additional tasks to correct these deficiencies (except the concerns EPA raised regarding the variance provisions). A more detailed explanation of the State's commitments can be found in EPA's September 15, 1993 proposed approval of the Missoula moderate nonattainment area PM sub 10 SIP (58 FR 48339-48343) and the TSD for that action). Since none of the rules associated with these commitments has an impact on the attainment demonstration, credited control strategies in the Missoula PM sub 10 SIP, or other Federal Clean Air Act SIP requirements for the Missoula moderate PM sub 10 nonattainment area due to EPA on November 15, 1991, EPA will take separate action, as appropriate, when such commitments are fulfilled by the State, and also will address the variances chapter at that time. Further, EPA is declining to take action on Chapter IX, Subchapter 14: Rule 1427, Control of Odors in Ambient Air. These odor provisions do not have a reasonable connection to the NAAQS-related air quality goals of the Clean Air Act.

The State has fulfilled one commitment to revise its NSPS and NESHAPs regulations to incorporate all Federal requirements promulgated through July 1, 1992. In a March 9, 1993 submittal, the State satisfied this commitment, and EPA will announce its action on these revisions in a separate notice.

Nothing in this action should be construed as permitting or allowing or establishing a precedent for any future request for a revision to any SIP. Each request for a revision to the SIP shall be considered separately in light of specific technical, economic, and environmental factors, and in relation to relevant statutory and regulatory requirements.

Final Action

This document announces EPA's final action on the action proposed at 58 FR 48339. As noted elsewhere in this final action, EPA received no adverse public comments on the proposed action. As a direct result, the Regional Administrator has reclassified this action from Table 1 to Table 3 under the processing procedures established at 54 FR 2214, January 19, 1989.

Regulatory Process

Under the Regulatory Flexibility Act, 5 U.S.C. 600, et seq., EPA must prepare a regulatory flexibility analysis assessing the impact of any proposed or final rule on small entities. 5 U.S.C. 603 and 604. Alternatively, EPA may certify that the rule will not have a significant economic impact on a substantial number of small entities. Small entities [*2540] include small businesses, small not-for-profit enterprises, and government entities with jurisdiction over populations of less than 50,000.

SIP approvals under section 110 and subchapter I, part D of the Clean Air Act do not create any new requirements, but simply approve requirements that the State is already imposing. Therefore, because the Federal SIP-approval does not impose any new requirements, I certify that it does not have a significant impact on a substantial number of small entities affected. Moreover, due to the nature of the Federal-state relationship under the Clean Air Act, preparation of

U.S. DEPARTMENT OF COMMERCE
National Technical Information Service
PB80-156169

Regulatory Options for the Control of Odors

(U.S.) Environmental Protection Agency, Research Triangle Park,

Prepared for

F-5 NC

Feb 80

TECHNICAL REPORT DATA (Please read Instructions on the reverse before completing)		
1. REPORT NO. EPA - 450/5-80-003	2.	3. RECIPIENT'S ACCESSION NO. PB 80 156169
4. TITLE AND SUBTITLE Regulatory Options for the Control of Odors		5. REPORT DATE February 1980 6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) George H. Wahl, Jr.		8. PERFORMING ORGANIZATION REPORT NO. OAQPS No.
9. PERFORMING ORGANIZATION NAME AND ADDRESS U. S. Environmental Protection Agency Office of Air, Noise and Radiation Office of Air Quality Planning and Standards		10. PROGRAM ELEMENT NO. 11. CONTRACT/GRANT NO.
12. SPONSORING AGENCY NAME AND ADDRESS		13. TYPE OF REPORT AND PERIOD COVERED Report to Congress 14. SPONSORING AGENCY CODE
15. SUPPLEMENTARY NOTES		

16. ABSTRACT

This report was prepared in response to Sec. 403b of the Clean Air Act Amendments of 1977. Together with "Odors from Stationary and Mobile Sources" prepared by the National Academy of Sciences it constitutes the Report to Congress of EPA.

This report surveys current State and local odor regulations, evaluates the effectiveness of regulations similar in form to those that might be promulgated under the Clean Air Act, and then discusses the advantages and disadvantages of alternative Clean Air Act regulatory strategies.

The report concludes that federal regulatory involvement in odor control does not appear to be warranted at this time.

17. KEY WORDS AND DOCUMENT ANALYSIS		
a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
ODORS	Clean Air Act	
18. DISTRIBUTION STATEMENT Release unlimited	19. SECURITY CLASS (This Report) Unclassified	21. NO. OF PAGES 80
	20. SECURITY CLASS (This page) Unclassified	22. PRICE

EPA Form 2220-1 (9-73)

United States
Environmental Protection
Agency

Office of Air Quality
Planning and Standards
Research Triangle Park NC 27711

EPA-450/5-80-003
February 1980

PB80-156159

Air

EPA

Regulatory Options for the Control of Odors

EPA-450/5-80-003

Regulatory Options for the Control of Odors

by

George H. Wahl, Jr.

U.S. ENVIRONMENTAL PROTECTION AGENCY
Office of Air, Noise, and Radiation
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

February 1980

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

1.1 Introduction

This report is the response of the Environmental Protection Agency (EPA) to Section 403(b) of the 1977 Clean Air Act Amendments (P.L. 95-95), which requires a study of the effects of odors and odorous emissions on public health and welfare and an analysis of strategies or authorities available or appropriate under the Clean Air Act for abating such emissions. The report is composed of two sections paralleling the twofold nature of Section 403(b). Under contract to EPA, the National Academy of Sciences prepared a study of

> "....the effects on public health and welfare of odors or odorous emissions, the sources of such emissions, the technology or other measures available for control of such emissions and the costs of such technology or measures, and the costs and benefits of alternative measures or strategies to abate such emissions."

On the basis of that report, EPA then prepared a second document (the present report), which contains

> "....an evaluation of whether air quality criteria or national ambient air quality standards should be published under the Clean Air Act for odors, and what other strategies or authorities under the Clean Air Act are available or appropriate for abating such emissions."

This EPA report also surveys current State and local odor regulations, evaluates the effectiveness of regulations similar in form to those that might be promulgated under the Clean Air Act, and then discusses the advantages and disadvantages of alternative Clean Air Act regulatory strategies. The NAS Study is summarized in the Appendix to the present report, and a complete copy of the NAS document accompanies this report.

1.2 Survey of State and Local Regulations

State and local regulations vary considerably but can be divided into nine general categories including:

- no specific regulation (i.e. common law)
- nuisance regulations
- emission standards
- ambient standards.

The nuisance approach remains the most widely employed strategy and virtually all regulatory programs continue to rely upon citizen complaints for enforcement purposes. Most agencies currently assign low priority to odors as a candidate for new federal regulation because of the great pressures produced by the revisions of state implementation plans (SIP's) mandated by the 1977 Clean Air Act Amendments and because odors are not perceived as a threat to public health. The combination of citizen/agency pressure and threatened legal action is generally sufficient to encourage problem sources to undertake voluntary compliance and abatement programs.

The majority of odor problems (as judged by citizen complaints) are attributable to a relatively small number of source categories (such as agricultural and livestock operations, diesel exhaust, incinerators, etc.). Thus, any regulatory strategy that might be devised should probably be focused on these source categories to maximize efficiency. Reactions to odor depend heavily, however, on local values and individual aesthetic judgments. The absence of any meaningful data that relate ambient odor levels (or odorant concentrations) to community annoyance levels will likely frustrate any attempts to establish general nationwide ambient odor regulations for the foreseeable future. Indeed, since odor perception is quite subjective, nuisance law, initiated by citizen complaints, appears to be an appropriate mechanism for dealing with odor problems.

1.3 Clean Air Act Regulatory Strategies

Under the Clean Air Act, there are basically four different regulatory strategies available for the control of odor pollution:

1. National Ambient Air Quality Standards (Sections 108-110)
2. New Source Performance Standards (Section 111)
3. National Emission Standards for Hazardous Air Pollutants (Section 112)
4. Motor Vehicle Emission Standards (Section 202).

Since a hazardous air pollutant is defined as one capable of causing or contributing to an increase in mortality or serious illness, Section 112 appears to be an inappropriate regulatory approach for odors. Thus, the available strategies are reduced to three, ambient standards (Section 108-110), stationary source emission standards (Section 111), and mobile source emission standards (Section 202). A 1978 statement of the Air Pollution Control Association Odor Committee (APCA TT4) well summarizes the essence of the problem of choosing between ambient and emission-based strategies:

> "Both approaches have strengths and weaknesses. The stack emission approach has obvious advantages over an ambient odor type regulation regarding the relative ease and lower costs of sampling and analyzing odors. Also, the emission source of objectionable odors is more readily determined by using stack measurements. However, the stack emission type approach requires an additional technical step - the correlation of stack emission with ambient odor concentration, either by obtaining empirical data or by use of atmospheric dispersion models, in order to be able to judge whether or not the resulting ambient odor concentration is acceptable to the community.
>
> On the other hand, if odor annoyance threshold data are available, an ambient odor limit can be related to a particular zoned area and specified to avoid an odor annoyance being experienced by the population that lives or works in a particular zoned area. Further, it should be recognized that odors do not discharge only from stacks or well-defined enclosures but could originate from fugutive type emissions (i.e. anaerobic lagoons). As a result, it may be necessary in certain areas to have a combination of stack emission and ambient odor regulations available to control all significant sources of odor."

While emission standards appear to offer more promise than ambient standards as a federal odor control strategy, technical difficulties still

exist. The fundamental problem is that application of best available control technology does not guarantee that community odor annoyance levels will not be excecded. This problem becomes even more complicated when fugitive odor sources such as lagoons are involved or when multiple odor sources are located in close proximity to one another. These problems make it nearly impossible to predict the odor reduction potential of any given abatement program.

1.4 Recommendations

Although there are problems inherent in any regulatory control program for odors, there are a number of specific recommendations which could improve the effectiveness of these regulations:

1. The existence of a community odor nuisance should be established before limits are applied to a specific odor source.

2. The relationship between ambient odor levels (or odorant concentrations) and odor annoyance thresholds for different communities or zoned areas must be determined prior to establishing ambient odor type standards. This step might be accomplished by determining both the dose-response relationships that equate community annoyance with odor intensity and the degree of unpleasant character of a particular odor. However, for some odorants such relationsips may be impossible to develop.

3. The Scentometer and ASTM syringe methods currently used by state and local agencies are considered to be inadequate for regulatory purposes. There is a basic need for odor sensory methods that are capable of measuring odors objectively and reliably, the results of which can be related to community annoyance.

1.5 Conclusions

In conclusion, federal regulatory involvement in odor control does not appear to be warranted. This conclusion is based on the following considerations:

1. Odors are not caused by a single pollutant, but rather are a subjective effect which may result from different combinations of numerous odorants. Thus, it is very difficult to associate any specific health or welfare effect to a given "odor concentration". As a result, the available data are not sufficient to support the establishment of a primary or secondary ambient air quality standard for odors.

2. Other problems which limit or preclude setting of national ambient air quality standards for odors or developing State Implementation Plans for odors include:

   a. Techniques used to measure odors are considered generally inadequate for regulatory purposes.

   b. Reliable procedures for relating ambient odor levels to the extent of community annoyance do not exist.

   c. Community tolerances or odor annoyance levels vary widely.

3. Use of best control technology for new or existing sources of odors under section 111 of the Act also has problems:

   a. It would require best controls nationwide, even though a source type may be a problem only in certain areas or situations.

   b. It does not guarantee that community odor annoyance levels will not be exceeded, especially where fugitive odor sources are involved or when multiple odor sources are located in close proximity to one another.

   c. Assessing and/or regulating all odor source categories would require an inordinate expenditure of Federal, State, and local control agency resources which are already fully extended to meet other Clean Air Act requirements.

4. Local and state odor control procedures appear to be generally adequate and are probably more cost effective than a uniform national regulatory program under the Clean Air Act.

2.0 INTRODUCTION

This report is submitted in response to Section 403(b) of the 1977 Clean Air Act Amendments (P.L. 95-95). That section required the EPA to study and report to Congress on the technical and regulatory dimensions of odor control.

This report consists of two sections

Section 1. The effects on public health and welfare of odors and odorous emissions, the sources of such emissions, available control technologies or methodologies, together with associated costs, and the costs and benefits of alternative abatement strategies.

Section 2. An evaluation of whether air quality criteria or national ambient air quality standards should be published for odors under the Clean Air Act, and an evaluation of what other Clean Air Act strategies or authorities are available or appropriate for abating odor emissions.

Section 1 has been prepared for EPA by the National Academy of Sciences[1] and is attached to this document.

Section 2 consists of several parts:

- A survey of current State and local odor control regulations;
- An evaluation of the effectiveness of selected State and local odor control regulations most similar in form to regulations that could be promulgated under the Clean Air Act;
- An analysis of the advantages and disadvantages of the three basic regulatory options (NAAQS, NSPS, NESHAP) for controlling odors available for federal use under the Clean Air Act.

3.0 SURVEY OF ODOR REGULATIONS

From a conceptual standpoint, existing State and local odor control regulations can be divided into nine general categories. A 1974 odor regulation survey of all state and selected local air pollution control agencies was published in the May, 1974 edition of the Journal of the Air Pollution Control Association using this nine-category format.[3] EPA has updated this 1974 survey, the results of which are summarized in Table 1.[4] The regulatory categories include:

1. No Specific Regulation - Although many jurisdictions have no specific odor control regulation, common law public or private nuisance continues as an available remedy for odor pollution problems.
2. Nuisance Regulation - These regulations codify the traditional nuisance concept, enabling public prosecution of cases that would have otherwise been left to private litigants.
3. Objectionability Criteria - This regulatory strategy is triggered when an odor is either complained of or deemed objectionable by a specified number or percentage of individuals. The only real difference between the objectionability criteria and a nuisance regulation is that, in the former, the criteria for establishing a violation are listed whereas, in the latter, they are not.
4. Ambient Sensory Approach - A Scentometer or other device is used to measure the "strength" of an odor by diluting odorous air with filtered odor-free air. The greater the dilution necessary to render an

TABLE 1. STATE AND SELECTED LOCAL ODOR CONTROL REGULATIONS

State/local agency	No regulation	Nuisance	Objectionability	Ambient sensory	Incineration or equivalent performance Standard	Sensory emission std.	Odorant-specific	Policy statement	Applicable regulatory section	Changes since 1974	Relative agency priority
Alabama		✓					✓		(1.11 (5.4))		Low
Alaska		✓					✓		18 AA (50. 110, 50.060)		Low
Arizona	✓								-		A County matter
Arkansas		✓							82-1938 State Laws		Low
California		✓							Div 26, PT4, §41700		
Bay Area*					✓		✓				High
South Coast											Moderate
Colorado				✓					Reg. #2		Moderate
Connecticut*			✓			✓	✓		19-508-23		Low
Delaware		✓							Reg. #XIX	✓	Important
D.C.		✓		✓					8-2-715		Low
Florida		✓					✓		17-2.04(4) &(6d)		Low
Georgia								✓	-		Low
Hawaii		✓							§5		
Idaho		✓			✓		✓		Sections K, O,Q		Low
Illinois		✓							Rules 102, 801, 802		Low
Indiana	✓								-		Low
Iowa*		✓			✓				§4.5(4558)	✓	Increasing
Kentucky*				✓			✓		401 KAR 3:020 Also 401 KAR 3:050§16; 401 KAR 3: 06055		Moderate
Kansas	✓								-		Low
Louisiana	✓								-		Low
Maine	✓								-		Moderate
Maryland		✓			✓				§10.18.04.04 (A) & (F)		Low
Massachusetts		✓							Reg. #9		Moderate
Michigan		✓							R.336.46		Important
Minnesota*				✓	✓						Moderate
Mississippi		✓									Low
Missouri				✓					10 CSR 10-3.090	✓	Low
Montana		✓			✓		✓		§16-2.14(1)-S1480		Moderate
Nebraska	✓										Low
Nevada				✓							Low
New Hampshire		✓					✓				Low
New Mexico							✓				
New Jersey		✓									Important
New York		✓									
North Carolina					✓						Low
North Dakota*			✓	✓					CH.33-15-16	✓	Increasing
Ohio		✓									Low
Oklahoma	✓										Low
Oregon*					✓		✓				Moderate
Pennsylvania*					✓					✓	Low
Puerto Rico			✓			✓			PRTB		Increasing
Rhode Island			✓						Reg. No. 17	✓	Increasing
South Carolina	✓								-		Low
South Dakota	✓								-	✓	Low
Tennessee	✓								-		Low
Texas		✓									Moderate
Utah	✓								-		
Vermont			✓		✓						Moderate
Virginia		✓					✓			✓	Low
Washington							✓				Moderate
West Virginia			✓								Moderate
Wisconsin			✓								
Wyoming				✓	✓						Low
Wayne County*						✓					Moderate

*Selected for in-depth review in this report

odorant undetectable, the greater its "strength." Scentometer-based regulations are premised upon very limited experimental evidence, indicating that ambient odors above 7 "dilutions to threshold"* will probably cause complaints, while those above 31 can be described as serious nuisances if allowed to persist for even a short time.[3] This approach applies to all odors, regardless of their "objectionability" and is limited to ambient air (as opposed to stack) measurements.

5. Control Technology-Based Regulations - Several states approach odor control regulation by requiring specified odor sources to install and use "best practical controls." Such control requirements are typically phrased in terms of an incineration, or equivalent, standard and are not directly related to community odor levels.

6. Sensory-Based Source Emission Standards - Five jurisdictions (see Table 1) impose source emission standards for odors measured in terms of the odor "concentration" in the stack gas stream. With this approach, a stack gas sample is collected and applied to a random panel of individuals. These panel samplings are used to determine the "dilution to threshold" or D/T of the emission, which is phrased in terms of "odor units per cubic feet." In Connecticut, for example, odor source emissions are limited to 120 "odor units per cubic foot."[5] This means that, after diluting any sample of the emission stream to 120 times its volume by odor-free air, only

*The term "dilution to threshold" refers to the amount of pure air which must be added to a known volume of odorous air in order to dilute the sample to the concentration at which it can just be detected.

50 percent of the panel members would detect the odor from the diluted sample. The presumption is that natural atmospheric dispersion mechanisms will reduce a stack emission at least 120 times to a concentration below the detection threshold by the time it becomes fully mixed with the ambient air at the receptor.

7. Odorant-Specific Emission or Ambient Standards - One of the most promising odor control strategies, in terms of its adaptability to the Clean Air Act, establishes odorant-specific emission and/or ambient standards. Several state and local agencies, (as well as EPA) for example, have established source emission rules governing total reduced sulfur (TRS) emissions from kraft pulp mills. Other agencies have adopted specific ambient air quality standards for hydrogen sulfide (H_2S). From a federal odor control standpoint, the promise of these strategies is that the Clean Air Act is more easily applied to the regulation of specifically identifiable substances than it is to controlling an amorphous perceptual concept such as "odor."

8. Policy Statements - Two states, Delaware[6] and Virginia[7], have regulations that are, in effect, statements of agency policy against air pollution that results in odor. These regulations are similar in many respects to nuisance regulations.

9. Combination of Ambient and Source Standards - A few agencies, including the Bay Area,[8] Illinois,[9] and Minnesota,[10] combine the ambient and emission standard approaches to odor control. Illinois, for example, employs an ambient scentometer regulation as well as an incineration requirement (for rendering plants) in its odor control regulations.

As indicated in Table 1, few State and local odor control regulations have undergone any significant revisions since 1974. The nuisance approach remains the most widely employed strategy, and virtually all regulatory programs continue to rely upon citizen complaints for enforcement purposes. Furthermore, odor control regulations are assigned a low priority by most air pollution control agencies since odors are perceived as nuisances (i.e., welfare effects) rather than as a health concern. In addition, the unprecedented impact of the state implementation plan revisions called for by the 1977 Clean Air Act amendments further minimizes state and local agency concern for new federal odor control regulations. The preparation, adoption and enforcement of these revised implementation plans will consume the large majority of available State and local air pollution control resources during the forseeable future.

The current thinking of most state air pollution control agencies is to focus their odor-related efforts on those sources, typically few in number, causing the majority of citizen complaints. In most states, a relatively limited number of source categories are responsible for the large majority of citizen complaints. The odor sources that are most frequently the cause of complaints include:

- Pulp mill/kraft mill/wood products
- Land fill/dump/open burning
- Fruit and vegetable processing
- Fisheries and fish processing facilities
- Petroleum and natural gas refining/asphalt production
- Rendering/meat packing/slaughter houses/tanneries
- Fertilizer plants

- Sewage/human waste
- Feedlots/stockyards
- Incinerators
- Coffee roasting/spices
- Commercial-restaurant/dry cleaning
- Paint/varnish/lacquer
- Coating applications (paint coating, baking and drying)
- Diesel (and other mobile source) exhausts

State and local enforcement actions against specific problem plants in these general categories have been a frequent occurrence in the past and are certain to continue in the future. This is particularly true for state and local agencies which view odor problems as a relatively high enforcement priority. The most active jurisdictions in this enforcement area include: The South Coast and Bay Area Districts in California; Delaware; Massachusetts; Michigan; Wayne County, Michigan; Minnesota; New Jersey; Rhode Island; Texas; and, Washington.

Several conclusions can be drawn from this regulation survey. The most striking one is that, while most jurisdictions experience many odor problems,* few rank them as one of their top agency priorities. Most officials believe that, while existing regulatory approaches need to be improved, they are generally adequate to solve major community odor problems. The combination of citizen/agency pressure and threatened legal action is

*Surveys reveal that as many as one half of all air pollution complaints relate to odor. This high proportion is undoubtedly due to the perceptual nature of the problem, however, and does not mean that odor pollution is the most serious air pollution problem. People know when they do not like a particular odor. They may not know when they are being harmed by more subtle forms of air pollution such as carbon monoxide (CO).

generally sufficient to encourage problem sources to undertake voluntary compliance and abatement programs. Indeed, the vast majority of odor problems are resolved extra-judicially. Only in relatively rare cases of strong community pressure and stiff industry resistance do these matters require an adjudicatory resolution. In those cases in which a court action is indicated, the regulatory procedures used by Texas have proven very effective.[11]

Another important conclusion is that most odor problems (measured in terms of citizen compliants) are attributable to a relatively few source categories. This conclusion is very significant in terms of regulatory strategy development since it makes it possible to devise narrowly focused control programs with relatively high cost-benefit ratios. Specifically, if odors could be controlled from pulp and kraft mills, rendering plants, sewage treatment plants, meat packing and processing operations, feedlots, painting operations and a few selected chemical processes, many of the nation's odor problems would be solved. While this statement has a simplistic ring, it does lead to a tentative conclusions that emission (as opposed to ambient level) controls may be a more effective regulatory strategy for odors.

Regulating odor presents many problems, regardless of the air pollution control strategy employed. Technical uncertainties are legion and varying perceptions of and social attitudes toward odor tend to undermine any national or uniform regulatory strategy. Clearly, from a regulatory standpoint, the most difficult problem, is the absence of meaningful data that relate emission rates or ambient odor levels to community annoyance. In the final analysis, it is the elimination of community annoyance that ought to form the policy basis of odor regulation. Without reliable annoyance threshold data for specifically identified odorants, it is very difficult to devise

odor-control regulatory strategies that are grounded on this fundamental base. Ambient standards tied to "detection" or "recognition" thresholds are generally inadequate because they do not necessarily relate to the annoyance property of the odorant within the context of the community setting in which the odor is normally experienced. This lack of a close relationship can lead to violations even though no nuisance condition exists.

The irony of the situation is that efforts to establish quantified acceptability or annoyance threshold levels for any particular odorant are fraught with subjective evaluations. Subjective reactions to odor differ between individuals and between communities. Indeed, this factor is a major reason for the view that nuisance law is an appropriate mechanism for addressing odor problems. Despite all of its substantive, procedural and evidentiary shortcomings, the nuisance approach is the only odor-regulation strategy now in use that is tied directly to the basic criterion of an unreasonable interference with public or private rights.* As in other areas of nuisance law, odor nuisance disputes are resolved on the basis of lay testimony concerning the reasonableness of the defendant's

---

*A public nuisance is created when the defendant's conduct invades a right common to all members of the public, such as the right to enjoyment of a park. A private nuisance, on the other hand, involves an invasion of a private party's interest in the use and enjoyment of his land. Since the Clean Air Act does not explicitly preempt the field of odor regulation, the two types of nuisance action would remain valid avenues for seeking abatement of unpleasant odors, even if ambient standards were established under that Act and the defendant was in compliance with them.[12]

Under the most widely recognized view, an odor problem must cause substantial annoyance to qualify as a nuisance. Unusually sensitive individuals are at a distinct disadvantage since annoyance is judged on the basis of the ordinary person living in that locality. Technical legal defenses and burdensome evidentiary problems also detract from the usefulness of nuisance actions and in most cases courts will not issue prohibitory injunctions even if the plaintiff prevails on the merits of his claim.[12]

behavior. The level of private or public annoyance is balanced against the defendant's interests in continuing to operate. Numerically based odor control approaches (ambient and source) lack this important feature. This is their basic shortcoming.

4.0 EVALUATION OF STATE AND LOCAL ODOR REGULATIONS SIMILAR IN FORM TO THOSE THAT COULD BE PROMULGATED UNDER THE CLEAN AIR ACT.

4.1 General Considerations

In judging the effectiveness of any odor regulations, few established guidelines exist. Presumably, the ideal regulation will prevent, reduce or eliminate community annoyance at minimum cost without introducing any significant new risks. Since annoyance, cost and "risk" are seldom measured in the same units, a direct comparison among them is difficult, and a simple numerical goal for effectiveness is not possible. Furthermore, secondary benefits of odor regulation, such as a general reduction in the number and quantity of pollutants inhaled by the population at large, an increase of real estate values, or improvement of corporate image, are even more difficult to quantify in similar units. They nevertheless are potential real secondary benefits of odor reduction.

Since the objective of this section is to evaluate the effectiveness of those existing state and local odor control regulations amenable to promulgation under the Clean Air Act, it is necessary to analyze the types of regulations available under the Act. Section 4.2 describes the regulatory options available.

4.2 Available Clean Air Act Regulatory Strategies

According to the Clean Air Act, four basic regulatory mechanisms may be used for controlling emissions to the atmosphere:

(1) Ambient Air Quality Standards (Sec. 108-110).

(2) New Source Performance Standards (Emission Standards) (Sec. 111).

(3) National Emission Standards for Hazardous Air Pollutants (Sec. 112).

(4) Motor Vehicle Emission Standards (Sec. 202).

The first option involves the establishment and attainment of national ambient air quality standards. Under this approach, EPA promulgates specific numerical ambient standards for specified (criteria) pollutants designed to protect public health (primary ambient standards) and public welfare (secondary standards). The Act delegates to the States the primary responsibility for attaining and maintaining these standards through the adoption and enforcement of State implementation plans (SIPs). For any given criteria pollutant, the SIP must set forth emission limitations and other control measures necessary to attain and maintain compliance with the ambient standards within the time established by the Act. The plans must also contain well defined procedures for preventing significant air quality deterioration resulting from major new emission sources in areas already cleaner than the standards.

The second available approach is through the promulgation of industry-specific new source performance standards.[39] Section 111 of the Act gives EPA the authority to establish standards of performance applicable to specific pollutants from new and modified* stationary sources. This provision recognizes that it is more practical to build pollution control into a new facility than to retrofit controls into an existing operation. New source performance standards require emission reductions that reflect that level of control achievable through application of:

---

*A "modified" source is one that undergoes a physical or operational change which causes new or increased air pollution. A "new" source is one which commences construction after NSPS regulations applicable to that source category are proposed by EPA.

> "...the best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any non-air quality health and environmental impact and energy requirements) the Administrator determines has been adequately demonstrated."

Before promulgating new source performance standards, EPA conducts tests of prototype and full-scale control systems, surveys pertinent literature, and documents manufacturer guarantees. These efforts are required in order to identify appropriate control systems which have been adequately demonstrated and which will be available in time to allow compliance by the affected industry.

Once the standard is set, the owner or operator need not use the control system identified by EPA, but the standard must be achieved. Normally, installation and operation of a particular control system is not enough; compliance is based on actual emissions. Only where it is not feasible for EPA to establish a numerical emission standard (e.g., petroleum storage vessels), may the agency establish NSPS requiring specified design or control techniques. In all other cases, the standard must reflect a quantified level or percentage reduction of emissions from the control system.

In addition to requiring performance standards for new and modified stationary sources, Section 111 also requires the states to adopt performance standards for "designated pollutants" from certain existing sources under Section 111(d). A "designated" pollutant is one which is subject to an NSPS but which has not been listed as "hazardous" under Section 112 of the Act or which is not listed as a Criteria Pollutant under Section 108.

If EPA promulgates an NSPS for a designated pollutant from new sources of a specific source category, an emission standard must be established by the

states governing emissions of that designated pollutant from all existing sources within the category. Fluorides from phosphate fertilizer and aluminum plants, sulfuric acid mist from acid plants, and total reduced sulfur compounds from pulp mills have been regulated under Section 111(d). Any standards applicable to odors under the NSPS program would qualify as "designated pollutant standards," thereby triggering existing source controls under Section 111(d).

Section 112 of the Clean Air Act authorizes EPA to promulgate national emission standards for new and existing sources of "hazardous air pollutants". The Act defines these pollutants as those capable of causing or contributing to an increase in mortality or serious illness. To date, EPA has used Section 112 sparingly, reserving it for the regulation of extremely dangerous pollutants such as mercury, asbestos, beryllium and vinyl chloride. Given the present uncertainty regarding the public health effects of odors, it seems quite doubtful that EPA could promulgate a defensible hazardous emission standard for the control of specific odorant or for odors generally. The potential advantages and disadvantages of this regulatory strategy will, therefore, not be analyzed further in this report.

In addition to the basic NSPS authority under Section 111, EPA is also empowered by Section 202 of the Clean Air Act to establish standards applicable to emission of any air pollutant from new motor vehicles or new motor vehicle engines. Conceptually these standards may be thought of as a special type of new source performance standard. They are intended to apply to vehicles or engines throughout their useful lives and to take effect after such period as the Administrator finds necessary to permit the

development of the requisite technology, giving appropriate consideration to the costs of compliance. The basic process for establishment of standards under Section 202 applicable to odors originating from motor vehicles would be comparable to that described above with respect to Section 111.*

4.3 Comparison of Ambient and Emission-Based Regulatory Approaches

The national Air Pollution Control Association (APCA) has a standing committee (the APCA TT4 Odor Committee), charged with review of basic odor control technology and regulation. Many of its members have contributed technical articles on odor regulations in recent years. After critically reviewing odor control regulations, the APCA Odor Committee was equally divided on the issue of selecting stack ("emission") as opposed to ambient type standards for odors. The following excerpt from the Committee's 1978 Report highlights the essence of the debate.[2]

> "Both approaches have strengths and weaknesses. The stack emission approach has obvious advantages over an ambient odor type regulation regarding the relative ease and lower cost of sampling and analyzing odors. Also, the emission source of objectionable odors is more readily determined by using stack measurements. However, the stack emission type approach requires an additional technical step - the correlation of stack emission with ambient odor concentration, either by obtaining empirical data or by use of atmospheric dispersion models, in order to be able to judge whether or not the resulting ambient odor concentration is acceptable to the community.
>
> "On the other hand, if odor annoyance threshold data are available, an ambient odor limit can be related to a particular zoned area and specified to avoid an odor annoyance being experienced by the population that lives or works in a particular zoned area. Further, it should be recognized that odors do not discharge only from stacks or well-defined enclosures but could originate from fugitive type emissions (i.e. anaerobic lagoons). As a result, it may be necessary in certain areas to have a combination of stack emission and ambient odor regulations available to control all significant sources of odor."

---

* For three of the pollutants covered by national ambient air quality standards (HC, CO, and NO_x), the vehicle emissions standards established under Section 202 must correspond to reductions specified in the Clean Air Act. However, this does not apply to odorous substances as such.

4.4 Local Programs Studied

Two local and eight State odor control programs were selected for careful analysis based upon 1978 regulatory programs:

1. The Bay Area Air Quality Management District in California
2. The Wayne County Health Department in Michigan
3. Connecticut
4. Iowa
5. Kentucky
6. Minnesota
7. North Dakota
8. Oregon
9. Pennsylvania
10. Rhode Island

All of these jurisdictions have odor control programs containing elements similar to those which could be promulgated by EPA. Each has also had relatively extensive experience in dealing with odor problems.

Conceptually, the regulations of these 10 jurisdictions can be divided into five categories: two "ambient" approaches, and, three "emission based" approaches. Table 2 presents this categorization scheme.

4.5 Criteria for Determining Regulatory Effectiveness

Although it is difficult to judge the overall effectiveness of any environmental regulation since many social, ecoromic and administrative factors are involved, several criteria of an "effective odor regulation" can be given:

1. It offers an effective mechanism for resolving community odor nuisances in a timely fashion.

2. It resolves problems in an equitable manner.
3. It requires only a reasonable commitment of private and public financial and manpower resources in light of the nature and magnitude of the problem.
4. It is responsive to community attitudes and sensibilities.*
5. It is enforceable.

Unfortunately, the effectiveness of odor regulations have not been empirically analyzed. Much insight can be gained, however, from reviewing available literature and through conversations with knowledgeable individuals in the governmental, industrial and academic sectors. The following sections apply the above-mentioned effectiveness criteria to the regulatory strategies employed by the agencies surveyed. Many of these agencies employ a combination of approaches, and when this is the case, those agencies' regulations will be analyzed in more than one section of the report. For purposes of analysis, the following categorization will be followed:

Ambient Approaches

1. Objectionability at property line
2. Scentometer
3. Odorant-Specific Ambient Standards

Emission-based Approaches

1. Odor level standards
2. Incineration or equivalent standards
3. Odorant-specific performance standards

---

*This is a more relevant consideration for odor regulation than for other environmental controls because of the subjective nature of the problem.

TABLE 2. STATE ODOR CONTROL STRATEGIES
AMENABLE TO THE CLEAN AIR ACT

Approach	Jurisdiction	Regulation	Operative Regulatory Language
Ambient (Non-odorant specific)	Bay Area	§15105	No person shall cause, let, permit, suffer, or allow the emission of any odorous substances which causes the ambient air at or beyond said person's property line to be odorous and to remain odorous subsequent to its dilution with 4 parts of odor-free air. (Dynamic olfactometer/triggered by specified frequency of complaints.)
	Connecticut	§19-508-23(a)(1)	Objectionability to staff investigator, considering nature, concentration, duration and location (beyond property line).
	Iowa	§400-4.5 (455B)	Violation occurs if odor is of such frequency, duration, quality and intensity as to harm public health or welfare or cause a nuisance.
	Kentucky	401 KPR 3:020 §4(10)	Ambient standard not to exceed 7 dilutions (scentometer)
	Minnesota	APC 9§(c)(4)	(4) No odor source shall emit air contaminants into the ambient air which cause odor outside the alleged polluter's property line in excess of the following limitations: (aa) One odor unit in areas zoned residential, recreational, institutional, retail sales, hotel or educational. (bb) Two odor units in areas zoned light industrial. (cc) Four odor units in areas zoned other than in subsections (aa) and (bb) above.
	North Dakota	§33-15-16-02	Limit of two odor concentration units outside property line (scentometer of ASTM).
	Rhode Island	Regulation No. 17	Objectionability to staff investigator, considering nature, concentration, location, duration, and source (beyond property line).
Ambient (Odorant-specific)	Connecticut	§19-503-23(a)(3)	Ambient threshold values established for 53 odorants.

TABLE 2 (Cont.)

APPROACH	JURISDICTION	REGULATION	OPERATIVE REGULATORY LANGUAGE
Emission-based (Non-odorant specific)	Wayne County, Mich.	Informal Agency Guidelines (Judicially upheld)	150 odor units/cubic foot - specified syringe dilution technique
	Connecticut	§19-508-23(a)(2)	120 odor units/cubic foot - Mills ASTM adaption
	Minnesota	APC 9§(c)(1-3)	(c) Odor Emission Limits. Violation of APC 9 shall be any discharge of air contaminants in excess of the following odor emission limits: (1) Odor sources emitting from well-defined stacks 50 feet or more above grad elevation and with adequate dispersion characteristics as determined by the Agency shall not emit odors in greater than 150 odor concentration units. (2) Odor sources of less than 50 feet elevation above grade or otherwise failing to create good dispersion conditions as determined by the Agency shall not emit more than 25 odor concentration units. (3) No odor source shall have an odor emission rate in excess of 1,000,000 odor concentration units per minute.
	Bay Area	§15103	Variable dilution rate depending upon elevation of emission point (triggered by specified frequency of complaints).
Emission-based (Performance standards)	Iowa	§20.3(1)(4)	Standards for anerobic lagoons.
	Oregon	§§25-055, 25-150 and 25-350	Standards for reduction of animal matter, kraft pulp mills and sulfate pulp mills.
	Pennsylvania	§123.31(a)	Incineration or equivalent standard for 15 listed source categories (and all sources of H_2S or mercaptans).
	Bay Area	§15106	TRS emissions from kraft pulp mills.
Emission-based (Odorant-specific)	Bay Area (Calif.)	§15104	Specific emission limitations established for dimethylsulfide, ammonia, mercaptans, phenolic compounds and trimethylamine. Varies with characteristics of emission source and excludes kraft pulp mills.
	Pennsylvania	§123.31(a)	Incineration or equivalent standard for all emitters of H_2S or mercaptans.

Combination Approaches

1. Minnesota

2. Bay Area

4.6 Ambient Approaches

Modern ambient odor regulations are typically phrased either in terms of the objectionability or detectability of odors at the plant boundary. Many agencies use ambient approaches in tandem with emission limitations, nuisance laws, or both in order to maximize enforcement flexibility.

4.6.1 The Objectionability Approach

In Connecticut,[5] Iowa[11] and Rhode Island,[12] an agency inspector checks, without instrumentation, such factors as the nature, concentration, duration and location of the alleged emission, relying only on his own perception of the alleged objectionable emissions. In almost all cases, inspectors in these states respond only on the basis of odor compliants directed at a particular source. The agency does not seek out odor violations since community odor complaints are believed to be the best measure of whether or not a problem exists.

An obvious advantage of this approach is that it is generally easy and inexpensive to administer, especially where a single source is clearly responsible for the problem. In addition, it is responsive to community sensibilities in that it is triggered by complaints. In the three states surveyed, it was indicated that this method is a reasonably effective one for solving community odor problems. Furthermore, the objectionability approach avoids many of the technical impediments inherent in more sophisticated methodologies. The subjective response of the inspector determines whether or not there is a violation irrespective of what a quantitative chemical or sensory analysis might show.

The disadvantages of the objectionability approach flow directly from those features that make it desirable. The high degree of subjectivity in the enforcement process makes possible problems of inequitable application of the law and an inability of source owners to effectively plan for compliance. In many ways, the objectionability approach is no different from the traditional public nuisance approach in that violations are established primarily on the basis of testimony from affected residents and from the agency inspector as to the objectionable nature of the source's emissions. While this approach enables official investigation and public prosecution of cases that would otherwise be left to the law of private nuisance, it does little more than codify traditional nuisance standards.

The State of Connecticut has had significant experience with the objectionability regulatory approach. Officials within the Connecticut Department of Environmental Protection (DEP) believe that the approach has worked reasonably well for controlling industrial odor problems although industry representatives are justifiably dissatisfied with the inherent subjectivity it requires. Difficulties arise, however, where odor complaints are raised in connection with existing or proposed non-industrial sources such as neighborhood restaurants or automotive repair shops. In these situations, poor local zoning laws are frequently the true basis of the problem. State air pollution control agencies are justifiably loath to become involved in minor local land use disputes.

Despite this limitation, the DEP's use of the objectionability approach is significant in that it has the legal authority to impose both ambient and emission-based odor standards. Connecticut's odor regulation prohibits the discharge of "objectionable" odors beyond the source property line. An odor is deemed "objectionable" when:

1. A staff member of the Department of Environmental Protection determines, following personal observation, that the odor is objectionable, taking into account its nature, concentration, location, and duration; or,
2. Samples from the source are taken and found to rate over 120 odor units per cubic foot as determined by Mills' adaptation of ASTM D-1391-57;[15] or,
3. If the odor is caused in whole or in part by a listed substance and when the specified concentration is exceeded for any period of time as demonstrated by analysis made in accordance with methods approved by qualified professional chemists.*

Connecticut DEP has found the modified ASTM and the odorant-specific ambient standard technique to be less effective than the objectionable-odor approach. The agency has been able to resolve most of its odor complaints without resorting to the use of odor panels or chemical analyses of property line odorant concentrations. One of the principal reasons for the agency's reliance on the subjective objectionability approach is that it provides a more reliable (albeit subjective) indicator of a true community odor nuisance. As noted earlier, the modified ASTM and other detectability-based regulatory standards may or may not protect against community annoyance.

4.6.2 Ambient Sensory Regulations

Several State and local agencies specify the use of a Scentometer as the recommended method for determining the allowable ambient level of odor pollution. Of the States surveyed, the approach is used in two: Kentucky[16] and North Dakota.[17]

*Connecticut's listed threshold values have proved to be essentially unworkable and unrealistic. Adequate measurement techniques have not been developed and there is no data that sufficiently confirms the reasonableness of the levels in terms of odor response.

The Scentometer consists of a small rectangular chamber that contains two sniffing tubes on top for insertion into the nostrils. Normal breathing draws the odorous air from the surrounding environment through the bottom panel and also through the two side panels, which contain activated carbon to provide odor-free air for dilution. The bottom panel is provided with several calibrated holes of varying diameter to vary the dilution ratio. These holes, which correspond to specific ratios of dilution to threshold (D/T), are designated in some odor regulations as a Scentometer reading number having a specific numerical odor strength. The device is limited to diluting the odor stimulus only to specified levels (e.g., 2, 7, 15, 31, 127 and 249 dilutions), with no adequate provision for achieving a graduated degree of dilution in between. The States of Kentucky and North Dakota specify allowable Scentometer readings of 7 and 2, respectively.

Although the Scentometer represents an inexpensive and administratively simple odor regulatory approach, it has certain basic disadvantages, which affect its trustworthiness as an enforcement tool. First, it normally is used by only one individual. Odor sensory responses by different people are highly subjective and can vary widely. (Odor sensory evaluation conducted with nine-member panels at IIT Research Institute and at TRC (The Research Corporation of New England) indicated that a tenfold variation in sensitivity normally exists among panel members. Occasionally, the difference was as high as a hundredfold). In addition, an individual's response to odor may vary from day to day. The Scentometer method does not provide for the selection of an odor sensory panel to average out high and low individual responses. These factors cause courts and administrative officials grave concerns about the ability to sustain enforcement actions where millions of dollars in control costs may be at stake.

Second, the construction of the instrument does not provide a reliable means for an individual to isolate his or her nose from the odorous environment being monitored. Depending upon the individual's pattern of breathing and ability to seal off the nasal passages with two sniffing ports, it seems reasonable to expect that any odor in the ambient air could bypass the instrument and be sensed directly by the nose, thus resulting in a false positive response. Since the individual is surrounded by an odorous environment, it may not be possible to isolate the contribution of of the suspected sources.

Third, as mentioned before, certain agencies have specified dilution-to-threshold levels in their regulations that were intermediate between 2 and 7 D/T or between 7 and 31 D/T. On the basis of various discussions with State and local agencies, the range of 2 to 7 D/T is particularly critical, and an odor sensory method is needed that accurately determines the odor dilution ratio within this range.[2] The Scentometer cannot fill this need.

Finally, the Scentometer is not necessarily related to community annoyance. While investigators have attempted to correlate Scentometer readings to community odor nuisance, the fact remains that the Scentometer measures odor detection, not odor annoyance. This basic dilemma, in concert with the above-mentioned limitations, led the APCA Odor Committee to conclude that the Scentometer is not a satisfactory instrument for measuring ambient odors for regulatory purposes.[2] This conclusion is shared by agency officials in both Kentucky and North Dakota.

4.6.3 Odorant-Specific Ambient Standards

With the exception of ambient H_2S standards, few state or major local agencies use odorant-specific ambient standards to regulate odor pollution. Ideally, an odor regulation would be odorant-specific rather than depend

on a general detectable odor standard. Unfortunately, not enough is known about the olfactory parameters of specific chemical substances. Although detection thresholds have been established for most of the more ubiquitous odorants such as H_2S and mercaptans, the reliability of these threshold values are a subject of controversy. Furthermore, generally accepted annoyance threshold values simply do not exist.

One agency which has made a significant effort to specify and regulate the ambient concentration of designated odorants is Connecticut. Although Connecticut has identified ambient odor threshold limits for 58 chemical substances, it does not rely on these threshold values in the enforcement of its odor regulation since the agency has little confidence in the correlation of these concentrations to community annoyance or nuisance conditions.* In short, the response of the human nose to chemical stimuli is simply not subject to precise quantification, especially in real-world ambient settings.

These Connecticut standards are based on a study by Arthur D. Little Inc., which determined odor threshold values for 53 commercial chemicals.[18] These odor threshold concentrations were determined with a panel of four trained professional people. The odor test room was designed to provide a minimum of background odors.

It is significant that the Arthur D. Little report on this specific work states that "the recognition odor thresholds reported in this study, determined as they were by trained panelists under ideal conditions, are not presented as indicative of concentration levels at which these compounds might constitute an odor problem in the ambient malodorous atmosphere. No attempt has been made to assess the degree of objectionability of the odorant chemicals, and the determina-

*Development of reliable sample collection procedures also presents a problem

tion of "odoriferous" concentrations in ambient air, for any given chemical and background odor moiety, would require field testing."[18]

4.7 Emission-based Approaches

Odor control strategies that focus on emissions avoid many of the problems inherent in ambient approaches. Most importantly, emission oriented controls eliminate the problem of having to quantify the precise ambient impact of the emitting source. Although the emission limits should be related to ambient impact in a general way*, compliance is determined on the basis of a quantitative analysis of the stack gas, not the ambient air into which the gaseous odorants diffuse.

This is not to say, however, that emission based controls are problem-free, since emission controls suffer from many of the same difficulties as ambient techniques. The most common emission based approach is the establishment of source and odorant-specific incineration or performance standards. For example, TRS standards for kraft pulp mills and incineration requirements for rendering plants have been promulgated by several air pollution control agencies. While these regulations are reasonably objective and specific, they only address a limited part of the total odor problem and do not necessarily insure the avoidance or resolution of community odor problems.

Another emission based alternative is the specification of the maximum odor dilution ratio of the stack emission. Under this approach, a source

*In setting odor emissions limits, anticipated ambient impacts associated with selected emission levels should be a central consideration. As noted earlier, however, the data on which to base such determinations is quite sparse.

may emit only a specified number of "odor units" per cubic foot of total emissions. An "odor unit" is defined as the number of cubic feet of odor-free air needed to dilute one cubic foot of the odorous emission to the point where the diluted sample cannot be detected by a specified percentage (typically 50 percent) of an odor sensory test panel. Connecticut specifies an odor emission limit of 120 odor units per cubic foot based upon the ASTM method as modified by Mills. Minnesota uses a similar approach employing a different modification of the ASTM method[20] but makes a distinction regarding stack height in specifying source emission odor limits.

4.7.1 The Odor Level Standards Approach

Several agencies, including Wayne County, Michigan; Connecticut; and, Minnesota specify a modified ASTM syringe dilution technique for assessing odorous stack emissions.

The basic method consists of taking a sample of the exhaust gas in a 100 cc. cylinder or 250 cc. glass tube. The gas sample is then evaluated under controlled conditions by a panel of trained individuals in an essentially odor-free environment. An odor panel of six to eight persons is normally selected by a prescribed odor sensory test to ensure the selection of people having average olfactory perception.

Individual odor panelists receive a series of pre-determined odor dilutions in 100 cc. syringes. Each panel member must smell momentarily a rapidly expelled pulse of odorous air from the 100 cc. syringe whose tip is directed toward the nostrils. The panelist indicates either a negative or positive response to the odor being detected and the panel's responses are correlated with the various odor dilution levels. The median odor threshold level is defined as that dilution level where 50 percent of the panel does not detect the diluted odor stimulus.

The advantages and disadvantages of the ASTM approach have been widely discussed in the literature. William H. Prokop of the National Renderer's Association summarizes the issues and makes specific recommendations in a paper entitled Status of Regulations for Scurce Emission and Ambient Odors:[21]

> "Although Friedrich and Benforado reported reliable results with the ASTM syringe method, it was emphasized that training of the odor sensory panel is important and following consistent procedures is necessary. The basic method lacks a defined procedure for odor stimulus presentation since the various odor dilutions are to be randomly presented to the panel by mixing the order of strong and weak odor stimuli. Sometimes, a blank or odor-free sample is substituted to check the panel's reaction. This has tended to produce confusing results and as a consequence, no satisfactory provision is available to check the reliability of positive-negative responses of the panel.
>
> "These basic shortcomings of the ASTM method were recognized by industry and an ASTM Task Group was organized to review the method. A position paper dated March 12, 1973 was prepared by this committee that critically evaluated the syringe dilution technique. The Committee basically concluded that an ascending order of odor concentration should be used in the presentation of odor stimuli to the panel and that at each level two syringes be submitted to the panelist. One syringe contains the odor stimulus and the other is a blank containing odor-free air. A forced choice answer is required; odor in the first or odor in the second.
>
> "Dynamic sensory methods are considered to be more reliable than static methods and have been developed by a number of investigators. Static odor sensory methods do not have any satisfactory provision to check the reliability of positive-negative responses of the panel. An approach is, therefore, desired where the diluted odor sample is presented to the panel for discrimination from samples of non-odorous air and results can be related to statistically significant confidence levels."

At the present time, only the Bay Area Air Quality Management District uses the dynamic approach.[8] It is suggested that this approach is superior to current static techniques thereby enhancing the effectiveness and enforceability of the regulation.

Agency experience with the static ASTM approach (and its modifications) has been mixed. As indicated earlier, Connecticut has decided to ignore its static ASTM provision, relying instead on the more subjective "objectionability" criteria. Air pollution officials in Wayne County, Michigan, on the other hand, believe that they have had good success in the application of the static modified ASTM approach. The validity of the method has been supported by a legal decision of the Michigan Court of Appeals.[22] The agency attributes its success to the significant experience it has had with this method. This experience has allowed the agency to develop some useful variations of the ASTM approach, which enhance its reliability. The agency believes that its across-the-board odor concentration unit approach has excellent general applicability for urban odor sources.

4.7.2 Incineration Standards

Numerous State and local regulatory authorities, including the Commonwealth of Pennsylvania, use an incineration or equivalent standard for regulating odorous emissions from designated source categories. Pennsylvania's standard is not atypical, and reads as follows:[23]

> "(a) (1) No person shall cause, suffer or permit, at any time, any emissions from the following processes unless the emissions have been incinerated at a minimum of 1200 degrees F. for at least 0.3 seconds prior to their emission into the outdoor atmosphere: chip dryers, animal blood dryers, asphalt oxidation, asphalt roofing manufacture, brake shoe debonding operations, core ovens, rendering cookers, varnish cookers, paint-baking ovens, meat smokehouses other than those in single family farms, plastic curing ovens, fabric-backing and fabric-coating baking ovens, ovens for curing of binders in mineral wood production, meat processing other than in single family farms, tear gas manufacture and sources of hydrogen sulfide or mercaptans. (2) Techniques other than incineration may be used to comply with the provisions of clause (1) of this subsection if it is shown to the satisfaction of the Department that such techniques are equivalent to or exceed the required incineration in terms of control of the odor emissions.

"(b) No person shall cause, suffer, or permit the emission into the outdoor atmosphere of any malodorous air contaminants from any source whatsoever, including those in compliance with the provisions of subsection (a) of this section, in such a manner that the malodors are detectable beyond the property of the person.

"(c) The prohibition in subsection (b) of this section shall not apply to odor emission arising from the production of agricultural commodities in their unmanufactured state on the premises of the farm operation." (Emphasis added).

The most important objection to the incineration standard approach is that it requires control regardless of the fact that a community odor problem may not be caused or threatened by the source. Critics point out that it is wasteful to impose substantial hardware, maintenance and energy costs on odor sources unless necessary to prevent an odor nuisance. Such an approach is contrary to the recommendation of the APCA Odor Committee that an existing or potential odor nuisance should be established before controls are required.[2]

The Commonwealth of Pennsylvania has recognized this flaw in the regulation and has corrected it administratively by requiring the establishment of a community odor problem before incineration will be required*. With this administrative adaptation, the Pennsylvania regulation has worked quite well according to agency officials. By reserving sanctions for sources truly causing community nuisances, the regulation can be narrowly focused.

Another advantage of the Pennsylvania approach is that it combines odorant and source-specificity by enumerating 15 source categories as well as all sources of hydrogen sulfide and mercaptans-two of the most wide-

spread odorants in Pennsylvania. This feature allows industry to be put on notice that they may be subject to controls unless they prevent an odor nuisance from arising. At the same time, however, by prohibiting the discharge of any malodors beyond the source property line, the regulation prevents its own specificity from creating regulatory gaps regardless of compliance with the source and odorant-specific incineration standard of the regulation.

An additional advantage of the Pennsylvania approach is that it allows alternatives to incineration, which are equally effective. While incineration is the best-developed odor control for many sources, it is poor policy to preclude new or innovative technological approaches. This flexibility of allowing source owners to propose less costly means of equivalent odor control fosters technological development and should be incorporated into all incineration standards.

Finally, the incineration approach avoids the complex subjective uncertainties inherent in the ASTM and Scentometer approaches, although determining whether another control method is equivalent to incineration may introduce problems of subjectivity. Compliance assessment is relatively routine, thereby eliminating the enforcement problems that plague the subjective regulatory strategies.

---

*This is a case-by-case determination based upon the nature of the problem and the number of valid citizen complaints.

4.7.3 Source-specific Performance Standards

For many years, performance standards for specific odorants from designated source categories have been used to control odorous emissions. Indeed, EPA has promulgated a federal New Source Performance Standard for pulp mill TRS emissions.[23] States are, therefore, obligated under Section 111(d) of the Clean Air Act to regulate TRS emissions from existing mills.

The greatest advantage of the performance standard approach is that it allows the agency to focus its resources on problem sources without getting bogged down in efforts to quantify stack or ambient "odors" through subjective sensory techniques. In areas where a few well-defined sources are responsible for the bulk of the odor complaints, this approach may well be the best one from both an economic and an administrative standpoint.

In Iowa, for example, anaerobic lagoons were perceived as one of the State's most serious odor problems. In response to increasing numbers of public complaints, Iowa enacted its first odor control rules in May 1977.[13] The rules established a construction permit program for new anaerobic lagoons and a nuisance-type odor standard for other odor sources. The construction permit provisions require that new anaerobic lagoons submit to a preconstruction review by the Iowa Dept. of Environmental Quality (DEQ). The review will assess the lagoon's odor production potential and water pollution potential. Implementation of the new rules is still under consideration, pending the outcome of public hearings designed to resolve differences between the rules developed by the DEQ and a new statute passed by the Iowa General Assembly.

While the performance standard approach works well in areas with relatively few odor sources, sole reliance on source-specific performance

standards in heavily urbanized or industrialized areas is not practicable. The variety of odor sources and odor complaints prevents the agency from establishing source performance standards for all potential sources.

In summary, source performance standards for specific odor sources can be a very effective odor-control technique where only a few sources or sources categories are responsible for most of the odor problem. Where this is not the case, as in much of the urbanized Eastern United States, performance standards for major odor sources must be supplemented with more general and more flexible alternatives.

4.8 Combined Ambient-Stack Approaches

Whether an emission or ambient approach is more effective frequently depends upon the nature of the odorant and the characteristics of the source. In the case of well-defined sources of odorants for which annoyance threshold data are available, ambient standards may be appropriate.* In other cases, ambient standards are impractical to administer, and emission standards must be employed.

4.8.1 Minnesota

The State of Minnesota has an odor regulation employing a combination of odor emission limitation and ambient standards.[10] With respect to odor emission limitations, a three-pronged approach is used. Under Minnesota regulation APC 9, the following limitations apply:

> Odor Emission Limits* Violation of APC 9 shall be any discharge of air contaminants in excess of the following odor emission limits:

---

* At present, adequate annoyance threshold data do not exist for any major odorant.

(1) Odor sources emitting from well-defined stacks 50 feet or more above grade elevation and with adequate dispersion characteristics as determined by the Agency shall not emit odors in greater than 150 odor concentration units.

(2) Odor sources of less than 50 feet elevation above grade or otherwise failing to create good dispersion conditions as determined by the Agency shall not emit more than 25 odor concentration units.

(3) No odor source shall have an odor emission rate in excess of 1,000,000 odor concentration units (O.C.U.) per minute.

Although the odor emission limitations in APC 9 may be restrictive, the effectiveness of this three-pronged approach lies in its recognition of the significance of odor dispersion and total mass loading.

The effectiveness of the one million O.C.U./minute standard is more controversial. This limit is obtained by multiplying the volumetric emission rate in cubic feet per minute by the odor dilution ratio measured at the emission source[24] and expressed in odor units per cubic foot. The APCA TT4 Odor Committee made the following comments on this approach:[2]

> The Committee was equally divided regarding their approval of or opposition to a total odor emission rate being applied for regulatory purposes. Those in favor considered this concept to be useful since another dimension other than odor concentration is available for evaluating an odor nuisance. In particular, it provides the means for totalizing a multiple number of odor emissions from a single source.
>
> Those opposed to this concept recognize it has a certain validity when applied to small volume emissions. However, they question this concept when applied to large volume emission, for example, from plant ventilating air scrubbers. Based on the previously cited total odor emission limit of one million odor units per minute, a 100,000 cfm scrubber would be allowed a stack emission odor concentration of only

---

*Minnesota which utilizes a modified ASTM method for determining compliance with its odor emission limitations, also has an incineration standard for animal matter processing facilities (APC 10).

10 odor units. This clearly is unrealistic and it is doubtful whether the specified syringe dilution technique is sufficiently sensitive at this low odor level to establish compliance reliably. The basic objective for an odor regulation should be to limit the ambient odor concentration at ground level, C_{max} rather than the total odor emission rate, Q. where both terms relate to atmospheric dispersion models.

It appears that the concept of total odor emission rate could be useful as a guideline for evaluating an odor nuisance but it should be applied judiciously for regulatory purposes*.

Minnesota's ambient regulatory approach for odors is somewhat novel but it results in problems of enforcement. It provides:

(4) No odor source shall emit air contaminants into the ambient air which cause odor outside the alleged polluter's property line in excess of the following limitations:

(aa) One odor unit in areas zoned residential, recreational, institutional, retail sales, hotel or educational.
(bb) Two odor units in areas zoned light industrial.
(cc) Four odor units in areas zoned other than in subsections (aa) and (bb).

The effort to distinguish between area types is sound policy in the abstract. However, this approach results in some very difficult technical and administrative problems in enforcement. Attempts to estimate the ambient odor impact of a source on "zoned" areas proved to be unworkable and is no longer being enforced in Minnesota. Techniques for estimating the impact of individual sources on ambient odor levels may become essential if odors were ever to be regulated as a criteria pollutant under the Clean Air Act. In particular, it would be important to be able to estimate

---

* The Committee noted with interest that Minnesota relies basically upon its stack emission limits, expressed in odor units per cubic foot, for enforcement of its odor regulations.

ambient odor impacts to determine compliance with the prevention of significant deterioration of "clean" areas.

4.8.2 The Bay Area Air Quality Management District

Probably, the most clearly drafted and well conceived odor regulation in effect today is that of the Bay Area Air Quality Management District serving the San Francisco - Oakland metropolitan area. Division 15 of the Bay Area regulations establishes a comprehensive scheme for regulating ambient and stack odors. The regulation blends specificity of scope and broad general standards in a way that maximizes its effectiveness.

The regulation begins by defining its scope. Specifically, occupational odors, as governed by the California Department of Industrial Relations, are not subject to Division 15. The regulation also provides express exemptions for the following sources and operations:

(a) Single family dwellings

(b) Restaurants and other establishments for the purpose of preparing food for human consumption, which employ less than 5 persons

(c) Materials odorized for safety purposes

(d) Materials possessing strong odors whose use is necessitated for reasons of public health and welfare and where no suitable substitute is available and where best modern practices are employed.

(e) Agricultural operations as described in the California Health and Safety Code, Section 41705.

The regulation also specifies that compliance does not exempt anyone from compliance with the State's nuisance law. That regulation is triggered upon the receipt of five citizen complaints and provides an effective tool for resolving minor odor problems on an informal basis.[26]

The emission limitations of Division 15 are not applied in the absence of evidence indicating that a potential odor nuisance exists. Specifically, § 15100 provides:

> "The limitations prescribed in § 15103, § 15104, § 15105 and in § 15106.1 through 15106.6 shall be, and shall remain, applic ble to a person responsible for an emission regulated by any of thes sections after the Air Pollution Control Officer has recieved odor complaints from ten or more complainants, within a 90-day period, alleging that said person is responsible for odors perceived by the complainants at or beyond the property line of said person, and deemed to be objectionable by them in the normal course of their work, travel, or residence."

Once triggered by the required number of complaints, Division 15 imposes four substantive requirements:

1. § 15103 - A general odor emission limitation based on the dilution ratio concept and applicable to all odorous substances emitted by any source*. Specific recognition of diffusion characteristics is provided by allowing odor intensity to increase in direct proportion to stack discharge height as set forth on the following page:

2. § 15106 - Limitations for Tot l Reduced Sulfur at Kraft Pulp Mills. (Also, Division 17 of the Bay Area regulations establishes an incineration standard for rendering plants.)

3. § 15105 - An off-property ambient limitation of four dilutions to threshold for all odorant substances. Compliance is also determined through the dynamic olfactory method.

---

* Compliance is determined through a dynamic olfactory approach.

Elevation of emission point above grade (feet)	Dilution rate (volumes of odor-free air per volume of source sample)
Less than 30	1,000
30 to 60	3,000
60 to 100	9,000
100 to 180	30,000
Greater than 180	50,000

2. §15104 Emission limitations for five particularly troublesome odorants. Again, source emission characteristics are factored into the standards as shown below:*

MAXIMUM ALLOWABLE EMISSION CONCENTRATION IN PPM

Compound or family of compounds	Type A emission point	Type B emission point
Dimethylsulfide $(CH_3)_2S$	0.1	0.05
Ammonia NH_3	5000	2500
Mercaptans calculated as methylmercaptan CH_3SH	0.2	0.1
Phenolic compounds calculated as phenol C_6H_5OH	5.0	2.5
Trimethylamine $(CH_3)_3N$	0.02	0.01

Specific analysis procedures are established for each odorant.

*Type A emission points have better dispersion characteristics than do Type B emission points. (See Sections 2036-2038-Regulation 2.)

The comprehensiveness and flexibility of the Bay Area approach enhances its effectiveness in resolving odor problems. Its most desireable features include:

- Specificity - The major odorous emissions are specifically governed by emission limitations. Further, Kraft pulp mills and rendering plants are subject to individual performance standards. This specificity adds certainty and predictability to the regulation and allows the agency to focus its resources where they can be most cost-effective. Exemptions are clearly established.

- Flexibility - The regulation preserves nuisance law and provides for general ambient and emission odor standards. These general standards allow the agency to deal with odor problems involving odorants other than the five covered by § 15105 or sources other than Kraft pulp mills or rendering plants.

- Responsive to Community Sensibilities - The complaint-triggering feature of the regulation avoids the dilemma of imposing expensive controls in the absence of a demonstrated community odor nuisance. This should be an important aspect of any odor control program.

- Clearly Written - The Bay Area odor regulation is very well drafted. The provisions are written in a way that can be understood by lay people without loosing technical accuracy. Testing and analysis procedures are clearly spelled out.

- State of the Art Measurement Approach - The Bay Area is one of few major air pollution agencies using the dynamic olfactory method for compliance testing. This approach avoids many of the problems inherent in the use of the Scentometer or the static ASTM approach.

- Enforceability - Agency officials indicate that the regulation has been very effective in resolving odor problems and obtaining compliance. Many sources have been brought into compliance with Division 15 through both formal and informal procedures.

4.9 Summary and Conclusions

Any analysis of alternative federal odor control strategies should begin with a review of State and local experience in the field. The general conclusion that can be drawn is that most agencies, while dissatisfied with exist-

ing regulatory approaches, recognize that technical limitations stand in the way of simple solutions or more effective alternatives. As noted by the APCA TT4 Odor Committee:[2]

> "There has been a definite reluctance expressed by some state and local agencies considering new regulations to incorporate the use of the ASTM syringe method or Scentometer. Instead, they prefer to retain the nuisance concept to regulate odors. Further, those agencies which do specify either of these two odor measurement methods still have an odor nuisance regulation or various criteria for determining an odor to be objectionable. However, the agencies recognize the limitations of the odor nuisance concept.
> "It must be concluded that present odor regulatory approaches are generally unsatisfactory. There are two basic needs: (1) develop sound administrative procedures for confirming the existence of a community odor nuisance, and (2) obtain reliable odor sensory data that can be related to community acceptance or annoyance of a particular odor."

The Committee then goes on to make several specific recommendations for improving the effectiveness of current odor-control regulations. These recommendations are in basic harmony with the expressed thoughts of those agency officials with whom discussions were held during this study and are pertinent to the analysis of future federal involvement in odor pollution control. From the standpoint of this report, the most significant conclusions of the APCA TT4 Committee are:

1. The Committee arrived at an essentially unanimous consensus that the existence of a community odor nuisance should be established before regulatory limits are applied to a specific odor source to obtain compliance. The procedure for establishing a community odor nuisance would require a specific number of valid complaints being received from separate households during a fixed time period. The Committee also concluded that there should be specific procedures and guidelines provided to establish the

existence of a community odor nuisance which take into account the community's characteristics: population distribution, socioeconomic activity, and land use zoning.

2. The Committee agreed that odor problems are basically related to the local community and should be regulated by the appropriate local agency.

3. Based on the technology currently available for measurement and control, limiting the odor dilution ratio of the stack emission is preferred as a method of correcting an odor problem. However, applying rigid limits to stack emissions should be avoided. Flexibility should be provided with some allowance being made to take into account local conditions and type of zoning.

4. The relating of ambient odors to annoyance thresholds for different communities or zoned areas is fundamental to establishing ambient odor type standards. This could be accomplished by determining dose-response relationships that equate annoyance with odor intensity and the degree of unpleasant character of a particular odor.

This is a relatively complex approach to developing odor regulations. However, there is a strong consensus of the Committee that it could prove to be useful as a long-term approach. It would be necessary for the funding of this program to be provided by the Federal EPA as opposed to any state or local agency.

5. It should be clear what specific types of odors and/or sources are to be excluded from the regulations.

6. The Scentometer and ASTM syringe methods currently used by state and local agencies are considered by the Committee to be inadequate for regulatory purposes. There is a basic need for odor sensory methods which are capable of measuring odors objectively and reliably.

   There is a consensus of the Committee in favor of the dynamic olfactometer approach and phasing out of the ASTM syringe method for regulatory enforcement."

Given the basic structure of the Clean Air Act, it would be difficult, if not impossible, for EPA to incorporate many of these recommendations into a federal odor pollution control strategy. This statement is particularly true with respect to the possible promulgation and implementation of national ambient standards under Sections 108-110 of the Act. The next chapter discusses these limitations and analyzes the advantages and disadvantages, as well as the legal-administrative constraints, of the various alternatives available for regulating odors under the Clean Air Act.

5.0 ADVANTAGES AND DISADVANTAGES OF ALTERNATIVE ODOR CONTROL STRATEGIES UNDER THE CLEAN AIR ACT

The ultimate objective of this report is to analyze the implications and limitations of alternative odor control options under the Clean Air Act. The Clean Air Act offers three basic alternatives for controlling non-hazardous emissions: 1) The implementation of National Ambient Air Quality Standards (NAAQS) through State Implementation Plans (SIP's), 2) The promulgation of Federal New Source Performance Standards (NSPS) for designated emissions from specified categories of stationary sources, or 3) The promulgation of Federal standards applicable to emissions from new motor vehicles.

Establishment of NAAQS sets in motion a complex, time-consuming and expensive legal process for implementing and maintaining the standards. Thus, any decision to establish a new ambient standard for odor would be made only after extensive research, analysis and public comment.

Although federal New Source Performance Standards generally have a far smaller macroeconomic impact than NAAQS, they may have significant microeconomic implications for the affected industries. As of July 1979, EPA had established NSPS for 27 stationary source categories.[27] To date, only one category, kraft pulp mills, has been subjected to performance standards concerned primarily with odor (i.e., total reduced sulfur)*.[24] In promulgating this standard, EPA did not attempt to use the subjective ASTM approach. Rather, objective

---

*The particulate/opacity standards for sewage treatment plants and petroleum refineries may have an indirect impact on odor emissions.[21]

technology-based numerical emission limitations of a readily measureable material were established as is the mandated approach under Section 111 of the Act.

The remaining sections of this report analyze the pros and cons of regulating odors under the NAAQS and NSPS provisions of the Clean Air Act.

5.1 National Ambient Air Quality Standards

5.1.1 Statutory Overview

Under Sections 108-110 of the Clean Air Act, EPA is authorized to establish national air quality standards for selected "criteria" pollutants. Once the standards are established, the Act requires the states to prepare, adopt and submit an implementation plan to EPA, which provides for the attainment and maintenance of the national standards within the time frames established by the Act. These state implementation plans (SIP's) must include emission limitations, compliance schedules and such other measures as may be necessary to ensure timely attainment and maintenance of the standards. Areas failing to attain the standards by the deadline are subject to the Act's new nonattainment provisions. Areas with air quality better than the standards must prevent significant deterioration of existing clean air.

A decision to regulate a pollutant under Sections 108-110 has major nationwide implications for government, industry and the public. The development of NAAQS implementation strategies is an expensive and lengthy process. In the 9 years since passage of the 1970 Clean Air Act Amendments, seven criteria pollutants have been established. They include sulfur oxides, particulate matter, nitrogen oxides, carbon monoxide, photochemical oxidants, hydrocarbons* and most recently, lead.[28]

The NAAQS-SIP process involves three basic steps. In analyzing whether and how odor pollution should be regulated under this statutory scheme, each

---

* The hydrocarbon standard is used only as a guide in assessing the adequacy of oxidant attainment strategies. Under existing regulation it cannot, therefore, be used to control odors per se.

step must be considered separately. The first step involves identification and formal listing by EPA of the "air pollutant" for which ambient standards are to be developed. Having listed the pollutant and published health/welfare effects criteria and control techniques guidelines applicable to it, EPA's next step is to establish primary and secondary national ambient air quality standards. Primary standards represent those concentrations of the pollutant that must be maintained to protect public health. Secondary standards address public welfare.

The third step in the process is the most costly and time consuming: implementation. The Act places primary implementation responsibility on the States to develop and submit implementation plans. These plans must comply with EPA's SIP Guidelines[29] and the Act gives EPA authority to promulgate its own SIP provisions for States submitting inadequate plans.[30] Regardless of who develops the plan however, it must be adequate to attain and maintain the ambient standards, and to prevent significant air quality deterioration in areas where those standards have been attained.

5.1.2 The Listing Process

Section 108 of the Act sets forth three conditions for listing pollutants that will be made subject to ambient air quality standards. The list includes each air pollutant*, emissions of which, in the EPA Administrator's judgment:

---

* The Act defines the term "air pollutant" as any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and by-product material) substance or matter which is emitted into or otherwise enters the ambient air.[31] This term appears to be broad enough to include "odors' generally or any specific odorant.

1. cause or contribute to air pollution which may reasonably be to endanger public health or welfare;

2. the presence of which in the ambient air results from numerous or diverse mobile or stationary sources; and

3. for which air quality criteria had not been issued before the date of enactment of the Clean Air Amendments of 1970, but for which the Administrator plans to issue air quality criteria under this section.

Within 12 months of including a pollutant on the list, EPA must issue health and welfare effects criteria that accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare that may be expected from the presence of such pollutants in the ambient air, in varying quantities.*

Clearly, the third condition is the critical determinant in the listing process. No one could deny that odors can pose a threat to public welfare or that they result from numerous and diverse mobile and stationary sources. The decision to issue air quality criteria under Section 108, however, is left to the EPA Administrator's discretion.**

---

* Although odor levels and specific health or welfare effects, have not been precisely correlated, similar uncertainties exist for all the existing criteria pollutants.

** Note, however, the courts have held that a § 108 listing is mandatory where, as in the case of lead, EPA has formally found that the pollutant meets conditions "1" and "2". Natural Resources Defense Council v. Train, 411 F. Supp. 864 (S.D.N.Y. 1976), aff. 545 F.2d 320 (2nd Cir., 1976).

Although odors were one of five pollutants originally identified in the Senate's 1970 Clean Air Act deliberations as being of nationwide concern,* EPA has indicated that it does not intend to list odor as a criteria pollutant in the forseeable future.[32]

Conceptually, there are only two ways of listing "odor" as a criteria pollutant under Section 108. The first is simply to lump all odorous compounds together and list "odor" as a criteria pollutant. The second is to identify one or more specific odorous compounds or class of compounds. As will be noted, both approaches would create difficult implementation and enforcement problems.

The listing of "odor" as a criteria pollutant presumes that exposure to any odor of a given intensity or for a specific duration causes adverse effects on health or welfare. Even if one accepts the validity of this premise, current understanding of odor effects does not allow any particular point on an "odor" measurement scale to be correlated with identifiable effects on public health or welfare. Odors vary widely in quality and acceptability at different intensities, frequencies and durations. Human perceptions of odor vary widely between individuals and even for the same individual, depending upon the context and location of exposure. In short, a single standard for all "odors" would create administrative chaos under the Clean Air Act. It would force States to develop strategies for reducing all ambient odor levels, regardless

---

* At the time of the passage of the 1970 amendments, air quality criteria already had been issued for five major pollutants (sulfur oxides, particulates, carbon monoxide, hydrocarbons and photochemical oxidants). Other pollutants of broad national impact identified by the Senate Subcommittee on Air and Water Pollution in its report accompanying the bill that ultimately became the 1970 amendments were fluorides, nitrogen oxides, polynuclear organic matter, lead and odors.[33] Of these five candidates, one (nitrogen oxides) since has been listed by the Administrator on his own volition as a criteria pollutant, and one other (lead) has been listed by compulsion as a result of a citizen suit.

of their annoyance threshold, to an arbitrary intensity level. Such reduction would be mandated regardless of whether those odors were annoying anyone.*

It follows that any attempt to list and establish national ambient stanards for odor pollution must focus on specific odorants or classes of odorants. While an identification of such compounds is obviously beyond the scope of this report, existing state and local regulations afford a good starting point for selecting such "criteria odorants." Mercaptans, phenolic compounds, hydrogen sulfide, carbon disulfide, amines, ammonia, and selected esters and fatty acids are the obvious candidates. If a realistic chemical description could be developed for one or two of the most widespread odorant combinations, it might be feasible to promulgate an appropriate ambient standard. Ideally, such a standard would address those odorous compounds or mixtures typically occurring together in the ambient air surrounding a relatively few source categories. One useful approach might be to develop a comprehensive chemical definition embracing the prime odorants attributable to a few source categories which are common source of odor complaints, such as:

1. Rendering, meat packing, slaughter houses.
2. Chemical plastic plants.
3. Sanitary land-fills.
4. Petroleum and natural gas refining and asphalt production.
5. Diesel exhausts.

If a reasonably specific chemical description could be developed, it might then be possible to determine a realistic annoyance threshold value for establishing ambient standards. In the absence of such a description,

---

* While a complaint-triggering mechanism is a feasible screening device under state and local odor regulations, the Clean Air Act does not appear to allow such flexibility. The air quality management frame - work of the Act employs standards fixed in terms of allowable concentration levels such as ppm or $\mu g/m^3$.

the sheer number of different odorants, each with unique odor qualities, would clearly preclude an odorant-specific approach to the problem.

5.1.3 Establishing Ambient Standards

Upon the issuance of effects criteria for a listed criteria pollutant, EPA must propose and later promulgate national primary and secondary ambient air quality standards. National primary ambient air quality standards "shall be ambient air quality standards, the attainment and maintenance of which in the judgment of the Administrator, based on (the) criteria and allowing an adequate margin of safety are requisite to protect the public health."* It is clear from the legislative history that the public whose health is to be protected includes "particularly sensitive citizens such as bronchial asthmatics and emphysematics who in the normal course of daily activity are exposed to the ambient environment."[33]

The national secondary ambient air quality standards prescribed under the Act "shall specify a level of air quality the attainment and maintenance of which in the judgment of the Administrator, based on (the) criteria, is requisite to protect the public welfare from any known or anticipated adverse effects."[33] The public welfare that must be protected "includes, but is not limited to, effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on

---

* The "adequate margin of safety" referred to in the Act was included to protect against potential health hazards not yet identified by research. Presumably the language would justify a health-related standard based upon ambiguous or incomplete data. The Clean Air Act allows the administrative prohibition of certain activities without actual proof of health hazards to an identifiable group, so long as the prohibition can be defended as a scientifically supportable margin of safety.[35]

personal comfort and wellbeing." The reference to "economic values" has been discussed in the literature:

> The reference to "economic values" should be read as authorizing protection from effects of economic significance not otherwise mentioned (such as offenses to aesthetic values) rather than indicating that economically significant effects are the only ones that count. Protecting public welfare from both "known or anticipated adverse effects" affords the environment a margin of safety in the standards, albeit not one as expansive as that extended the protection of public health. The primary and secondary standards, together, are conceived as establishing a minimally acceptable level of ambient air quality protecting man and his environment from all known effects and some that, although not known, are legitimate subjects of concern.[35]

With respect to odors, the reference to property deterioration and personal comfort and wellbeing seems clearly broad enough to include odor pollution.

Conceptually, there are several ways of phrasing an ambient standard for odor pollution. If a sensory approach is adopted, a standard could be based on the following sensory measurement techniques:

1. Objectionability to a trained inspector.
2. A scentometer reading.
3. Other dilution to threshold measurement techniques.

The alternative, as discussed earlier, is to specify a maximum numerical concentration for specified odorous compounds or mixtures.

The difficulties inherent in a sensorybased standard have been discussed in the previous chapter. The wide variation in specific odorants and in people's responses to them makes it impracticable to establish a single standard for all offensive odors.

An objectionability standard, for example, is, by definition, a purely subjective approach. To phrase a national ambient standard in terms of its "objectionability" to a trained investigator is totally incompatible with air quality management orientation of the Act. Concepts such as "attainment," nonattain-

ment," "maintenance" and "prevention of significant deterioration" demand a specific numerical standard by which to measure the success or failure of implementation plans. No matter how many verbal parameters are established to guide the inspector's subjective determinations, precise quantification of ambient conditions is impossible with this approach.

Similarly, the Scentometer approach, through phrased in terms of a quantifield level of odor intensity, is simply too unreliable. As discussed earlier, the APCA TT4 Odor Committee has concluded that the Scentometer is an inadequate tool for purposes of odor regulation. Furthermore, Scentometer readings have no established direct relationship to odor nuisance or annoyance.

The odor sensory panel approach to ambient odor analysis is currently used by the Bay Area Air Quality Management District. This approach involves the collection of a sample of ambient air on or near the owner's property line. This sample is then administered at specified dilutions to a pre-screened odor panel. If over 50% of the panel detects odor in a sample of a specified dilution (usually 4:1), a violation exists.

The odor panel approach, if properly administered, works well under an administrative scheme that responds to odor complaints. It is through the receipt of valid complaints that a potential odor problem is flagged. The feasibility of this approach disappears, however, when one attempts to establish an across-the-board ambient-odor standard regardless of the fact that individuals are not annoyed by atmospheric concentrations that exceed the standard. Since odor detection thresholds, as measured by an odor panel, have no established correlation with odor annoyance thresholds, an ambient standard, based on an odor panel technique would force States to impose odor emission controls regardless of whether or not an odor problem existed.

In this context, it is very important to remember that the fundamental objective of SIP emission regulations is to attain and maintain the national ambient standards. This objective obviously requires an ability to quantify the relationship between changes in pollutant emissions and resulting air quality. On an even more basic level, the ambient standard approach presumes that attainment will protect public health and welfare.

These considerations are pertinent to the decision of whether or not to establish an ambient odor standard. Dispersion modeling techniques for odor are not well-developed. and their use is limited to short distances and to nonreactive odorants. More importantly, as noted earlier, there is insufficient data on which to base a presumption that a given ambient odor level will prevent nationwide community annoyance problems. While the argument can certainly be made that a similarly tenuous ambient concentration-health/welfare link exists for most of the current criteria pollutants, the problem is more significant for odor because the welfare effects that they cause relate to a single perceptual phenomenon.

This is not to say that the secondary (welfare) standards cannot address perceptual insults generally or odors specifically. Clearly, Section 302(h) of the Act defines "welfare effects" with more than sufficient breadth to cover such impacts. From a practical and technical standpoint, however, the difficulty of defining the acceptability of a given odor concentration in quantitative terms severely limits the adaptablity of the NAAQS approach to odor pollution control.

Thus, the most promising approach for the establishment of a national ambient air quality standard for odors would involve the determination of annoyance threshold levels for selected malodorants characteristic of the most ubiquitous odors or most common emissions. Annoyance thresholds differ

from simple laboratory hedonic responses because the thresholds are determined by a population (possibly acclimated) in the context of normal exposure. Such relationships have not been determined to date.

5.1.4 Implementation - Administrative Considerations

No matter how an ambient odor standard might be phrased, several practical considerations cast doubt on the wisdom of promulgating such a standard. The listing and setting of standards is but a prelude to an enormous administrative undertaking aimed toward eventual compliance.

Within 9 months after the promulgation of ambient standards, all States are required to adopt and submit to EPA implementation plans, which provide for the implementation, maintenance and enforcement of the standards.[36] Attainment of the primary (healthrelated) standard must be achieved within 3 years of the plan's approval by EPA. Attainment of the secondary (welfarerelated) standard must be achieved in a "reasonable time."

The development of state implementation plans generally imposes large economic burdens on the government agencies that must prepare them and the air polluting industries that must comply with them. Comprehensive emissions inventories and air quality/meteorologic analyses must be developed, and detailed analyses of alternative emission reduction programs must be completed. Actual implementation involves the expenditure of considerable public and private dollars for administration, hardware controls, plant modifications and other outgrowths of the SIP process.

The 1977 Clean Air Act Amendments, currently being incorporated into the SIP,s by the States, represent a significant increase in the complexity and

economic impact of the NAAQS-SIP program. During 1979, the States must submit plans to EPA for attaining the ambient standards in areas that failed to achieve them by the original deadline[37] and SIP revisions for preventing significant deterioration.[38]

Needless to say, the current SIP revision process is consuming a large fraction of state, local and federal air pollution control attention and resources. Thus, in the absence of some very compelling public health or welfare problem, it seems ill-advised to impose a federal presence in an area that has been traditionally regulated at the state and local level as a nuisance-type problem.

Apart from such practical administrative difficulties, federal ambient odor standards do not appear to represent the most costeffective means of solving odor problems. Odor pollution, unlike most other forms of air pollution, is a problem only to the extent that affected individuals perceive it as a problem. Uniform national standards, even if they could be tied to odor annoyance (and, at present, they cannot) leave no room for variable community sensibilities and preferences. Reactions to odor vary, not only between individuals, but also among different localities. For example, odors that may lead to numerous complaints in a rural or suburban area may go virtually undetected in an urban or industrial setting. It is certainly logical to argue that an odor regulatory strategy should be flexible enough to accomodate such local sensibilities. The NAAQS program does not offer such flexibility.

Finally, and most significantly, the current lack of knowledge concerning odor measurement and modeling would frustrate efforts to implement the air quality management requirements of prevention of significant deterioration and nonattainment. Even if an adequate sensory-based standard could be developed, concepts such as "significant deterioration," "net air quality

benefit" and "baseline air quality" would be extremely difficult to apply to odor pollution. The air quality management framework of PSD and nonattainment are difficult enough to apply to conventional pollutants. Attempts to apply these requirements to a perceptual pollutant such as odor would create potentially insurmountable implementation problems.

5.2 Federal New Source Performance Standards

5.2.1 Statutory Overview

Section 111 of the Act gives EPA the authority to establish standards of performance for new and modified stationary sources.* New Source Performance Standards require emission reductions that reflect that level of control achievable through application of:

> The best technological system of continuous emission reduction which (taking into consideration the cost of achieving such emission reduction, any non-air quality impacts and energy requirements) the Administrator determines has been adequately demonstrated.**[39]

The two most obvious issues raised by Section 111 are the extent to which cost must be taken into account and the extent to which an "adequately demonstrated" system must have proved itself through actual operation.

---

* A 'modified' source is one that undergoes a physical or operational change with causes new or increased air pollution. A 'new' source is one which commences construction after NSPS regulations applicable to that source are proposed.[40]

** Once the standard is set, the owner or operator need not use the control system identified by EPA, but the system used must achieve the standard. Normally, installation and operation of a particular control system is not enough; compliance is based on acutal emissions. Only where it is not feasible for EPA to establish a numerical emission standard (e.g., petroleum storage vessels), may the agency establish NSPS requiring specified design or control techniques. In all other cases, the standard must reflect a quantified level of emissions from the control system.

It is not enough that the prototype system be adequately demonstrated and the cost justified. The Act also requires that the standard actually promulgated be an "achievable standard" and one "which is within the realm of the adequately demonstrated system's efficiency". While such a standard may not be set at a level that is purely theoretical or experimental, it need not necessarily be routinely achieved within the industry prior to its adoption.[41]

The Act requires EPA to establish standards for those categories of stationary sources that have a significant impact on air pollution. Although this definition conceivably could apply to all odor sources and, indeed, every industrial sector of the economy, as of July 1979, EPA had established NSPS's for 27 categories of stationary sources covering a limited number of pollutants.

In addition to requiring performance standards for new and modified stationary sources, Section 111 also requires the states to adopt performance standards for "designated pollutants" from certain existing sources under Section 111(d). A "designated" pollutant is one which is subject to NSPS but which has not been listed as "hazardous" under Section 112 of the Act or which is not listed as a criteria pollutant under Section 108.

If EPA promulgates an NSPS for a designated pollutant from new sources of a specific source category, an emission standard must be established by the States governing emissions of that designated pollutant from all existing sources within that category. Fluorides from phosphate fertilizer and aluminum plants,[27] sulfuric acid mist from acid plants,[27] and total reduced sulfur compounds from kraft pulp mills[24] have been regulated under the authority of Section 111(d). Rendering plant standards have been considered but have never been proposed, since odor measuring abilities have been

deemed inadequate for fair enforcement and since standards for other pollution sources offered a greater opportunity for improving ambient air quality.

Promulgation by EPA of standards limiting emissions of odorous materials from motor vehicles can be considered as a specialized type of New Source Performance Standard for the purposes of this report. Section 202 of the Clean Air Act provides EPA with the basic authority to establish standards applicable to new manufactured motor vehicles and motor vehicle engines. These standards require the manufacturer to demonstrate compliance with prescribed emissions limits for prototype vehicles or engines operated for extended periods before he is eligible to receive a certificate allowing him to proceed with sale of the vehicle or engine to the general public. To establish such standards, EPA must show that technology is available to permit compliance at reasonable costs* and that suitable methods of measurement exist for the material regulated. At this time, no odor standards applicable to motor vehicles are under development. Consideration has been given in the past to odor standards applicable to heavy duty diesel engines designed for trucks and buses. At the present time, however, it appears that the state of the art in the design of heavy duty motor vehicle engines has advanced to the point where new and well maintained engines of these types are not objectionable sources of urban odors. Thus, in this report, no further consideration will be given to the regulation of odors under the provisions of Section 202 of the Clean Air Act.

It should be added that poorly maintained vehicles that are powered by catalyst-equipped gasoline engines or by diesel engines can produce odors under some circumstances.

*Except for three of the pollutants covered by NAAQS's: HC, CO and NO_x

TABLE 3. PRIORITIZED MAJOR SOURCE CATEGORIES FOR NEW SOURCE PERFORMANCE STANDARD (NSPS) DEVELOPMENT

Priority	Source category
1*	Synthetic Organic Chemical Manufacturing Industry (SOCMI)
	(a) Unit processes
	(b) Storage and handling equipment
	(c) Fugitive emission sources
	(d) Secondary sources
2	Industrial surface coating: cans
3*	Petroleum refineries: fugitive sources
4	Industrial surface coating: paper
5	Dry Cleaning
	(a) Perchloroethylene
	(b) Petroleum solvent
6	Graphic arts
7*	Polymers and resins: acrylic resins
8	Mineral wool
9	Stationary internal combustion engines
10	Industrial surface coating: fabric
11	Fossil-fuel-fired steam generators: industrial boilers
12	Incineration: non-municipal
13	Non-metallic mineral processing
14	Metallic mineral processing
15	Secondary copper

*Designates a significant odor source.

Table 3 (Cont.)

Priority	Source category
16	Phosphate rock preparation
17	Foundries: steel and gray iron
18	Polymers and resins: polyethylene
19	Charcoal production
20*	Synthetic rubber
	(a) Tire manufacture
	(b) SBR production
21	Vegetable oil
22	Industrial surface coating: metal coil
23	Petroleum transportation and marketing
24*	By-product coke ovens
25	Synthetic fibers
26	Plywood manufacture
27	Industrial surface coating: automobiles
28	Industrial surface coating: large appliances
29*	Crude oil and natural gas production
30	Secondary aluminum
31	Potash
32	Sintering: clay and fly ash
33	Glass
34	Gypsum
35	Sodium carbonate
36	Secondary zinc

*Designates a significant odor source.

Table 3 (Cont.)

Priority	Source category
37*	Polymers and resins: phenolic
38	Polymers and resins: urea-melamine
39*	Ammonia
40	Polymers and resins: polystyrene
41	Polymers and resins: ABS-SAN resins
42*	Fiberglass
43	Polymers and resins: polypropylene
44*	Textile processing
45*	Asphalt roofing plants
46	Brick and related clay products
47	Ceramic clay manufacturing
48*	Ammonium nitrate fertilizer
49	Castable refractories
50	Borax and boric acid
51*	Polymers and resins: polyester resins
52	Ammonium sulfate
53	Starch
54	Perlite
55	Phosphoric acid: thermal process
56	Uranium refining
57	Animal feed defluorination
58	Urea (for fertilizer and polymers)
59	Detergent

*Designates a significant odor source.

Table 3 (Cont.)

Other Source Categories

Lead acid battery manufacture[1]

Organic solvent cleaning[1]

Industrial surface coating: metal furniture[1]

Stationary gas turbines[2]

---

[1]Minor source category, but included on list since an NSPS is being developed for that source category.

[2]Not prioritized, since an NSPS for this major source category has already been proposed.

5.2.2 Impact of the 1977 Clean Air Act Amendments

The 1977 Clean Air Act Amendments made several important changes to Section 111. Some of these changes are quite relevant to the issue of NSPS for odor sources even though odor control may not be the prime consideration for regulation development. Two of the most significant changes are:

1. Expansion of NSPS Coverage[39]

The new Act directs EPA to greatly expand the coverage of NSPS program between 1978 and 1982. Specifically, EPA was directed to list all stationary source categories which had not been made subject to NSPS when the amendments were enacted. This list was published on August 21, 1979 (44FR49222). The final prioritized list as amended following public comment is reproduced in Table 3. By August 1980 standards must be promulgated for 25% of the categories identified. By August 1981, standards must be promulgated for 75% of the listed categories, and by August 1982, standards must be established for the remaining 25%.

Several of the listed sources could cause significant odor problems in many areas, if uncontrolled. Table 3 denotes these sources with asterisks. As an added benefit of these regulations, reduction of emissions of odorants from these source categories should produce significant odor reduction benefits from existing sources in the affected category as they are required to control those "designated" odorants pursuant to Section 111(d) of the Act. Although not designed as an odor control strategy, the promulgation of New Source Performance Standards (NSPS's) will have the effect of reducing odorous emissions from a variety of important odor sources.

2. Dispersion Techniques Not An Acceptable Method of Compliance[40]

The Amendments clarify that neither intermittent or supplemental controls (those varying with meteorological conditions) nor dispersion techniques (e.g., tall stacks) may be used as a means of compliance with NSPS. The new law specifies that the required emission reduction strategy must be a technological system of continuous control.[40]

The dispersion limitation has a rational basis in the context of criteria pollutants with known or suspected health effects. Congress has decided that

for these pollutants, control requirements must reduce total atmospheric loading as opposed to allowing compliance through improved atmospheric dilution. Applying this limitation to odors may not be appropriate, however, since the ultimate objective of any odor emission limitation is to eliminate odor nuisances rather than to protect public health. Dispersion techniques and supplemental control systems frequently represent an effective and economical means of accomplishing this basic objective.

5.3 Conclusions

While new source performance standards and designated pollutant standards under Section 111 appear to offer more promise than ambient standards as a federal odor control strategy, technical difficulties still exist. The fundamental problem is that applying best available control technology does not guarantee that community odor annoyance levels will not be exceeded. This problem becomes even more complicated when fugitive odor sources such as lagoons are involved or when multiple odor sources are located in close proximity to one another. These factors make it nearly impossible to estimate the "odor impact" of any particular source or to predict the odor reduction potential of any given abatement program.

Despite these difficulties, federal new source performance standards for selected odor sources may be an approach to solving some existing and avoiding many future odor problems that should be carefully considered. A well focused approach would avoid "federalizing" the odor pollution field, while substantially reducing odor emissions from those source categories that are most frequently the cause of complaints.

6.0 GENERAL CONCLUSIONS

With the current state of odor pollution technology, each of the regulatory approaches available under the Clean Air Act is beset by technical uncertainties and varying social preferences toward odors, which tend to undermine a national regulatory program.

Unambiquous evidence demonstrating adverse health effects of odors has not been established. Although it is recognized that exposure to odorants can produce such symptoms as nausea, anorexia, or sleeplessness, there are no definitive data relating odor exposure to these responses. Therefore, the available data are insufficient to support establishing a primary ambient air quality standard for odors.

A similar problem would be encountered in attempting to develop welfare-based ambient air quality standards. Subjective reactions to odors vary between both individuals and communities and are highly dependent upon the context in which the odor is perceived. At the present time, it is not possible to predict community annoyance from the measured sensory or analytical properties of odors. Methods are available for determining community annoyance, but these methods have not as yet been correlated with sensory or analytical measurements of ambient odor levels. Without reliable data relating ambient odor levels to community annoyance, it would be difficult to devise an ambient air quality standard for odors that would ensure the protection of the public welfare without imposing unnecessarily stringent controls on odor emission sources.

There are additional technical and administrative implications associated with establishing National Ambient Air Quality Standards for odors.

First, odorants and their odors vary widely in character and acceptability at different intensities, frequencies, and durations. It follows that it is not possible to set a single ambient air quality standard for all offensive odors. On the other hand, the sheer number of different odorants, each with unique odor properties, hinders an odor specific approach to the problem.

Second, the establishment and implementation of ambient air quality standards is a resource-intensive process and may not represent the most cost-effective means of solving odor problems.

Third, the current lack of knowledge concerning odor measurement and the application of dispersion modeling to establish levels of significant concern for odors would tend to impede the ability of States to implement National Ambient Air Quality Standards for odors. In many cases, odor detectability levels or odor annoyance thresholds exceed the analytical sensitivities of readily available pollution measurement devices. Also, existing dispersion models are inadequate to predict the impact of alternative odor abatement strategies on ambient odor levels, particularly in areas close to several industrial emission sources.

Finally, uniform National Ambient Air Quality Standards leave no room for variable community preferences. Reactions to odors are dependent upon local values and aesthetics. It can be argued that an odor regulatory program should be flexible enough to accommodate local sentiments on this issue. The NAAQS program does not offer such flexibility.

Regulating odor pollution through New Source Performance Standards would avoid many of the problems inherent in the ambient air quality standard approach. Because the majority of odor problems are attributable to a relatively small

number of source categories, this approach appears to offer a more cost-effective means of odor control than establishing a NAAQS program for odors. This approach would allow regulatory agencies to focus their resources on problem sources without having to expend massive efforts in the monitoring of ambient odor levels or in devising detailed control strategies.

The primary drawback to controling odor problems through New Source Performance Standards is that emission controls for NSPS are not required to be correlated with the impacts on ambient air quality. Instead, these regulations are only required to reflect a level of control equivalent to the best available control technology (with costs and other non-air quality factors considered), which has been adequately demonstrated. Because some odorants can persist in causing annoyance at very low concentrations, NSPS's will not necessarily ensure that odor annoyance is sufficiently abated. The overall effectiveness of NSPS's in controlling odors is also reduced by the fact that fugitive sources are hard to identify and assess and that multiple sources of odors may combine to produce unacceptable effects.

To date, EPA's application of New Source Performance Standards to the control of odor pollution has been limited. In accordance with the Clean Air Act Amendments of 1977, however, EPA has greatly expanded the list of stationary source categories subject to NSPS's. A number of these newly listed sources are known to cause significant odor problems in many areas. Establishing NSPS's for these source categories is expected to produce significant odor reduction as a secondary benefit.

In the final analysis, the basic structure of the Clean Air Act makes it difficult to tailor odor regulations to the needs and sensibilities of our nation's local communities. Therefore, it is concluded that specific

federal odor regulations are not warranted. However, it appears that federal involvement, in the form of research assistance to develop the knowledge required to effectively administer local control programs, may be desirable.

REFERENCES

1. Odors from Stationary and Mobile Sources, National Academy of Sciences, 1979.

2. W. H. Prokop, " Developing Odor Control Regulations: Guidelines and Considerations", JAPCA, 28, 9 (1978).

3. G. Leonardos, "A Critical Review of Regulations for the Control of Odors", JAPCA, 24, 461 (1974).

4. See also, Ch. 12 of ref. 1

5. Connecticut Air Pollution Control Regulations, Sec. 19-508-23.

6. Delaware Air Pollution Regulation XIX.

7. Virginia Air Pollution Control Regulations, Section 4.60.

8. Bay Area Air Quality Management District Regulations, Division 15.

9. Illinois Air Pollution Control Rules 102, 801 and 802.

10. Minnesota Regulations APC 9 and APC 10.

11. Texas Air Control Board, Special Project Report No. SP-6, January 13, 1976.

12. See e.g. Rankin vs. Harvey Aluminum, 226 F. Supp. 169 (D. Ore, 1963).

13. Iowa Administrative Code, Chapter 14, Sections 3.1, 4.4, and 14.3

14. Rhode Island Regulation No. 17

15. J. L. Mills, "Quantitative Odor Measurement", 56th Annual Meeting of the Air Pollution Control Association, Detroit, Mich., June 9-13, 1963.

16. Kentucky Rules, 401, Sec. 3:020, 4(10).

17. North Dakota Air Pollution Control Regulations, Chapter 33; 15-16.

18. G. Leonardos, D. Kendall, and N. Bernard, "Odor Threshold Determination of 53 Odorant Chemicals", JAPCA, 19, 91(1969).

19. Manufacturing Chemists Association, Part I - Odor Thresholds for 53 Commercial Chemicals, Research Report from Arthur D. Little, Inc., October 1968.

20. D.M. Benforado, W.J. Rotella, and D.L. Horton, "Development of an Odor Panel for Evaluation of Odor Control Equipment," JAPCA, 19, 101 (1969).

21. W.H. Prokop, Annals of the New York Academy of Sciences, 237, 288-308 (1974).

REFERENCES (Cont.)

22. 79 Mich-App 668 (1977).

23. 25 PA Code 123.31

24. 40 CFR 60.283

25. H.E. Friedrich and D.M. Benforado, Paper 73-271, 1973 APCA Annual Meeting.

26. California Health and Safety Code, Sec. 41700

27. 40 CFR 60

28. 40 CFR 50

29. 40 CFR 51

30. 42 USC Sec. 7410, CAA Sec. 110(c).

31. 42 USC Sec. 7602, CAA Sec. 302(g).

32. Air Program Strategy for Attainment and Maintenance of Ambient Air Quality Standards and Control of Other Pollutants, U.S. EPA, 1977.

33. Committee on Public Works, National Air Quality Act of 1970, S.Rep. No. 1196, 91st Cong. 2nd Session 7 (1970).

34. 42 USC Sec. 7409, CAA Sec. 109(b)(1).

35. Rodgers, "Environmental Law", West Publishing Co., 1977, p. 226

36. 42 USC Sec. 7410, CAA Sec. 110(a).

37. Public Law 95-95 Sec. 129(c)

38. 42 USC Sec 7471, CAA Sec. 161

39. 42 USC Sec. 7411, CAA Sec. 111(a)(1)

40. 42 USC Sec. 7423

41. Portland Cement Association v. Ruckelshaus, 48b, F 2d375 (1973).

APPENDIX

CONCLUSIONS OF THE NATIONAL ACADEMY OF SCIENCES REGARDING ODOR MEASUREMENTS

(1) Odorous emissions and odorous ambient air exhibit various analytical and sensory properties. Knowledge of the numerical values of some of these properties is essential to control of the odorous pollution.

(2) Analytical properties of the odorous emissions or odorous ambient air are characterized by the chemical identities and concentrations of the odorants present.

(3) Sensory properties of odorous emissions or odorous ambient air consist of (a) perceived odor intensity, (b) change in intensity with dilution, (c) odor detectability including odor detection and recognition thresholds, (d) odor character, and (e) hedonic tone, which refers to the pleasantness/unpleasantness of the odor.

(4) A determination of the sensory properties of odors from the analytical data on the odorous samples in most cases is not yet possible.

(5) Various methods are available for measurement of analytical and sensory properties of odorous emissions and odorous ambient air, but we do not know how to apply them.

(6) A limited amount of information is available on the performance of the various measurement methods but is nonetheless sufficient for a preliminary selection of those which are most suitable and appropriate for a further development; in particular, needs exist for a more comprehensive investigation on their reproducibility, means of improving the reproducibility, and applicability of various types of emissions and ambient air odors.

(7) The methodology for estimating the impact of ambient odors is not well developed.

(8) The existing odor control regulations, wherever they are quantified in terms of some odor property, almost exclusively prescribe some form of odor detection threshold measurement as a basis for determining the severity of the odorous pollution; by far the most dominant are the ASTM D-1391 Syringe Dilution and the Scentometer methods. The present state-of-the-art of odor measurement technology is capable of providing methods that are free from several shortcomings of these two methods and can supply more useful information on pollution odors, especially on the dose/response function for specific odors.

(9) Significant factors in odor measurements of emissions and ambient air are (a) techniques of the sample acquisition, (b) sample storage, if any, (c) selection of the most appropriate analytical or sensory property to be measured, (d) selection of a practical method for measuring this property in an easily standardizable way, and, in the case of sensory measurements, selection of procedures essentially free from various specific effects inherent in the sensory evaluations, and (e) performance of the specific methods, especially with respect to the reproducibility of results when identical odorous samples are evaluated by different working groups.

(10) Unless all factors affecting the values of odor thresholds are standardized, widely different odor thresholds are likely to be reported for the same samples by different groups. Until then, data obtained by the same system, preferably by the same panelists, can be utilized in monitoring of the efficiency of odor control on a relative basis.

(11) A single odor threshold value does not exist; it is a function of measurement method variables and may be defined only by reference to specific measurement systems. There may be a functional "true" value based on the detection or recognition threshold of an odor in free ambient air, entering such air from an essentially non-odorous environment; if this value for the particular odor were known, the odor measurement system that produces the threshold value closest to such hypothetical true value, either directly or through some calibration plot, would be a preferred odor threshold measurement system. Work in this direction in open air is unknown.

(12) The hedonic tone (pleasantness/unpleasantness) is widely recognized as a very important factor in determining the relative annoyance potential of the odorous pollution. Limited experience demonstrates that measurement of hedonic tone produces correlated results when performed in different laboratories on similar sets of odorants. A broadly accepted hedonic sample reference scale does not yet exist, but appears feasible. The relation between the hedonic tone and the annoyance that results when the same odor is encountered in the context of odorous pollution is poorly understood, especially for pleasant odors.

(13) Analytical measurements are applicable to monitoring the content of specific odorants in emissions and in ambient air. In a few cases where partial correlations have been found between the odor threshold or odor intensity of the odorous samples and the content of specific odorants, the analytical measurements can be a valid tool for monitoring the state of odor control. Analytical data may assist in relating an ambient odor to its possible sources and in verifying atmospheric dispersion models. In most odor pollution cases, many odorants are present and analytical data cannot substitute for sensory data.

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO. EPA - 450/5-80-003	2.
3. RECIPIENT'S ACCESSION NO. PB 80 156169	
4. TITLE AND SUBTITLE Regulatory Options for the Control of Odors	5. REPORT DATE February 1980
	6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) George H. Wahl, Jr.	8. PERFORMING ORGANIZATION REPORT NO. OAQPS No.
9. PERFORMING ORGANIZATION NAME AND ADDRESS U. S. Environmental Protection Agency Office of Air, Noise and Radiation Office of Air Quality Planning and Standards	10. PROGRAM ELEMENT NO.
	11. CONTRACT/GRANT NO.
12. SPONSORING AGENCY NAME AND ADDRESS	13. TYPE OF REPORT AND PERIOD COVERED Report to Congress
	14. SPONSORING AGENCY CODE
15. SUPPLEMENTARY NOTES	

15. ABSTRACT

This report was prepared in response to Sec. 403b of the Clean Air Act Amendments of 1977. Together with "Odors from Stationary and Mobile Sources" prepared by the National Academy of Sciences it constitutes the Report to Congress of EPA.

This report surveys current State and local odor regulations, evaluates the effectiveness of regulations similar in form to those that might be promulgated under the Clean Air Act, and then discusses the advantages and disadvantages of alternative Clean Air Act regulatory strategies.

The report concludes that federal regulatory involvement in odor control does not appear to be warranted at this time.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
ODORS	Clean Air Act	

18. DISTRIBUTION STATEMENT Release unlimited	19. SECURITY CLASS (This Report) Unclassified	21. NO. OF PAGES 80
	20. SECURITY CLASS (This page) Unclassified	22. PRICE

EPA Form 2220-1 (9-73)

END
DATE
FILMED
6-5-80
NTIS

STATE OF MICHIGAN

AIR QUALITY
IMPLEMENTATION PLAN

PURSUANT TO THE
FEDERAL CLEAN AIR ACT
AMENDMENTS OF 1977

Revisions May 1, 1979

combined maximum allowable emission limit, provided that the reduction is achieved in a time frame required for compliance of each individual source. The rules generally pertain to all sources within an affected category on a state wide basis. However, emphasis is placed on the major metropolitan areas (Detroit, Flint, Grand Rapids and Lansing) where reductions of VOC emissions should have the most benefit in reducing peak concentrations of oxidants.

9.2.6 Emission Limitations and Prohibitions for New Sources of Volatile Organic Compounds

9.2.6.1 Discussion of Existing Rules

The existing rules contain no emission limitations for new VOC sources. However, the state does enforce VOC emission limitations that are specified in the Federal Standards of Performance for New Stationary Sources.

9.2.6.2 Discussion of Proposed Rules

Rules proposed under Part 7 include emission limitations and prohibitions for new sources of VOC emissions not subject to the offset or PSD requirements. The rules contained in this part require the application of the best available control technology, compliance with any applicable New Source Performance Standard, or any permit condition, whichever would result in the most stringent limit. Specific provisions are provided for new gasoline bulk plant, bulk terminal, and service station loading operations, and any new metal cleaning and degreasing equipment.

9.2.7 Miscellaneous Emission Limitations and Prohibitions

9.2.7.1 Discussion of Existing Rules

The existing rules prohibit diluting or concealing an emission without resulting in a reduction in the total release of air contaminants to the atmosphere. The rules also require air cleaning devices to be installed, maintained, and operated in a satisfactory manner and provide that excess emissions resulting from abnormal conditions or breakdown of process equipment shall not be deemed to be in violation of the rules if the owner advises the Commission of the circumstances and outlines a corrective program acceptable to the Commission. Additionally, the existing rules contain a general nuisance regulation that prohibits the emission of any air contaminant detrimental to the safety, health, welfare or comfort of any person.

9.2.7.2 Discussion of Proposed Rules

Deletion of the general nuisance regulation has been proposed and Rule 901 has been proposed in its place. The new rule contains wording based on advice contained in a recent Michigan Court of Appeals ruling, which found the language contained in

the former nuisance regulation to be inadmissibly vague. The new rule prohibits emissions which have injurious effects to human health or safety, animal life, plant life or property, or which causes unreasonable interference with the comfortable enjoyment of life and property.

Rule 911 would require certain sources to prepare a malfunction abatement plan. This plan would include a preventative maintenance program; identify how the source operation would be monitored and describe the corrective measures that would be implemented in the event of a malfunction or equipment failure. This rule is designed to minimize adverse air quality impacts resulting from excess emissions associated with equipment failures and malfunctions.

The existing Rule 48 regarding equipment failures and breakdowns has been proposed for deletion in favor of proposed Rule 912. Rule 912 requires the Commission to be notified when prolonged equipment malfunctions or equipment failures take place but does not allow such notification to constitute an exemption from the applicable emission limits.

Proposed Rule 930 requires control of carbon monoxide emissions from large cupola operations located in carbon monoxide nonattainment areas. The proposed rule requires those sources to be equipped with a carbon monoxide control system that is 90 percent efficient.

9.2.8 Intermittent Testing and Sampling

9.2.8.1 Discussion of Existing Rules

The existing rules authorized the Commission to require the owner of a source to conduct source emission tests prior to the issuance of the permit to operate. The rules also require the source owner to notify the Commission at least seven days prior to the test, and to submit test results to the Commission within 30 days after the last test date. The existing rules also provide that the Commission will specify the acceptable test procedures and, further, that the Commission may conduct additional tests on behalf of the state.

9.2.8.2 Discussion of Proposed Rules

The proposed Part 10 rules greatly expand the conditions under which a source owner may be required to perform a stack test at his own expense. These additional conditions are specified in Rule 1001. The proposed rules also identify the specific test methods that must be used, provide for alternative or equivalent test methods, and specify procedures that must be followed in conducting a performance test.

9.2.9 Continuous Emission Monitoring

of Veterinary Medicine (21 CFR 5.83), Part 522 is amended in § 522.1885 by adding after paragraph (c) (1), (2), (3), and (4) the footnote reference [1] and by adding at the end of the section the footnote to read as follows:

§ 522.1885 Prednisolone tertiary butylacetate suspension.

* * * * *

(c) *Conditions of use.* (1) * * *[1]
(2) * * *[1]
(3) * * *[1]
(4) * * *[1]

Effective date. This regulation is effective May 6, 1980.

(Sec. 512(i), 82 Stat. 347 (21 U.S.C. 360b(i)))

Dated:
April 25, 1980.

Lester M. Crawford,

Director, Bureau of Veterinary Medicine.

[FR Doc. 80-13678 Filed 5-5-80; 8:45 am]

BILLING CODE 4110-03-M

[1] These conditions are NAS/NRC reviewed and deemed effective. Applications for these uses need not include effectiveness data as specified by § 514.111 of this chapter, but may require bioequivalency and safety information.

DEPARTMENT OF THE INTERIOR

Bureau of Indian Affairs

25 CFR Part 11

Law and Order on Indian Reservations; Court of Indian Offenses

AGENCY: Bureau of Indian Affairs, Department of the Interior.

ACTION: Final rule.

SUMMARY: There is an urgent and compelling need for judicial and law enforcement services on the Pleasant Point and Indian Township Indian Reservations in the State of Maine. As a result of a recent decision by the Maine Supreme Court, *State of Maine v. Dana*, 404 A.2d 551 (1979) *cert. denied*, 48 LW 3523 (1980), justice is no longer effectively administered under State laws and by State law enforcement authorities on either reservation. The withdrawal of these services has left a void in the law and order program in the two areas and could have serious effect on the safety of their residents. Furthermore, the Associate Solicitor, Division of Indian Affairs, has determined that both the Pleasant Point and Indian Township Reservations are Indian country within the meaning of 18 U.S.C. 1151. Therefore, these events necessitate the establishment of an Indian court system which will provide an adequate machinery for law enforcement on the Pleasant Point and Indian Township Indian Reservations. The establishment of a Court of Indian Offenses to serve these two reservations is only intended to be a temporary measure necessary to the effective administration of justice on the two reservations. It is not intended to prevent the Tribe on either reservation from securing other means of achieving the effective administration of justice, and legally removing either reservation from the application of the regulations under Part 11.

EFFECTIVE DATE: May 6, 1980.

FOR FURTHER INFORMATION CONTACT:

George T. Skibine, Acting Judicial Services Officer, Division of Tribal Government Services, Office of Indian Services, Bureau of Indian Affairs, Washington, D.C. 20240, telephone: (202) 343-7885.

SUPPLEMENTARY INFORMATION: This revision is made under the authority contained in 5 U.S.C. 301 and 25 U.S.C. 2, and delegated by the Secretary of the Interior to the Assistant Secretary—Indian Affairs by 209 DM 8.

The Bureau of Indian Affairs, in a notice published on January 31, 1979, 44 FR 7235, has determined that the Passamaquoddy Tribe of Maine is an entity having a government-to-government relationship with the United States and which the United States recognizes as eligible for programs administered by the Bureau of Indian Affairs.

The Department of the Interior has determined that this document is not a significant rule and does not require a regulatory analysis under Executive Order 12044 and 43 CFR Part 14.

The usual 30 calendar days deferred effective date period has been waived under 43 CFR 14.5(b)(5)(ii)(B) to expedite the prompt establishment of the Court of Indian Offenses in order to minimize the potential danger to the residents of the two areas resulting from inadequate law enforcement.

Proposed regulations were published in the **Federal Register**, Vol. 45, No. 49, at 15570 and 15571 on March 11, 1980. No comments were received during the comment period.

The principal author of this document is George Skibine, Branch of Judicial Services, Division of Tribal Government Services. Section 11.1(a) of Subchapter B, Chapter I, of Title 25 of the Code of Federal Regulations is amended by adding subparagraph (30) to read as follows:

§ 11.1 Application of regulations.

(a) Except as otherwise provided in this part, §§ 11.1-11.87 of this part apply to the following Indian reservations:

* * * * *

(30) Pleasant Point and Indian Township (Maine).

Dated: April 25, 1980.

Rick Lavis,

Deputy Assistant Secretary—Indian Affairs.

[FR Doc. 80-13747 Filed 5-5-80; 8:45 am]

BILLING CODE 4310-02-M

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[FRL 1485-1]

Approval and Promulgation of Implementation Plans; Michigan

AGENCY: U.S. Environmental Protection Agency.

ACTION: Final rule.

SUMMARY: The United States Environmental Protection Agency (USEPA) announces today final rulemaking on revisions to the Michigan State Implementation Plan (SIP). These revisions were submitted to USEPA by the State to satisfy the requirements of Part D of the Clean Air Act (Act). USEPA published a notice of proposed rulemaking on these revisions on August 13, 1979 (44 FR 47350). Based on its review of the State's response and the public comments, USEPA takes final rulemaking action to approve, or conditionally approve, specific portions of the Michigan submittal as revisions to the federally approved Michigan State Implementation Plan. This Final Rulemaking action does not address the adequacy of State rules to control emissions from the iron and steel making industry; Consent Orders submitted as part of the State's control strategy for the sulfur dioxide nonattainment areas; the ozone control strategy; transportation control plans; inspection and maintenance provisions; carbon monoxide control strategy for the Detroit nonattainment area; Prevention of Significant Deterioration (PSD) provisions; and the general requirements of the Clean Air Act which are not Part D requirements (Sections 121, 126, 127, 128, and 110(a)(2)(k). The provisions which are part of Michigan's Part D SIP or are general requirements of the Clean Air Act are, or will be, addressed in separate Notices of Proposed Rulemaking.

EFFECTIVE DATE: This final rulemaking becomes effective on May 6, 1980.

ADDRESSES: Copies of the SIP revision, public comments on the Notice of Proposed Rulemaking (44 FR 38587), and USEPA's evaluation and response to comments are available for inspection at the following addresses:

U.S. Environmental Protection Agency: Region V, Air Programs Branch, 230 South Dearborn Street, Chicago, Illinois 60604.

U.S. Environmental Protection Agency, Public Information Reference Unit, 401 M Street, S.W., Washington, D.C. 20460.

FOR FURTHER INFORMATION CONTACT: Mr. Gary Gulezian, Chief, Regulatory Analysis Section, Air Programs Branch, Region V, U.S. Environmental Protection Agency, 230 South Dearborn Street, Chicago, Illinois 60604, (312) 886-6053.

SUPPLEMENTARY INFORMATION: On March 3, 1978 (43 FR 8962) and on October 5, 1978 (43 FR 45993), pursuant to the requirements of section 107 of the Clean Air Act (Act), as amended in 1977, USEPA designated certain areas in each state as nonattainment with respect to National Ambient Air Quality Standards (NAAQS) for total suspended particulates (TSP), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (Ox), and nitrogen dioxide (NO_2).

Part D of the Act, added by the 1977 amendments, requires each state to revise its SIP to meet specific requirements for areas designated as nonattainment. These SIP revisions must demonstrate attainment of the primary National Ambient Air Quality Standards by December 31, 1982, and in certain circumstances no later than December 31, 1987 for ozone and/or carbon monoxide. The requirements for an approvable SIP are described in a Federal Register notice published April 4, 1979 (44 FR 20372). Supplements to the April 4, 1979 notice were published on July 2, 1979 (44 FR 38583), August 28, 1979 (44 FR 50371), September 17, 1979 (44 FR 53761), and November 23, 1979 (44 FR 67182).

On April 25, 1979, the State of Michigan submitted its proposed SIP to USEPA to satisfy the requirements of Part D. USEPA published a notice of proposed rulemaking on the proposed revisions on August 13, 1979 (44 FR 47350). The notice of proposed rulemaking (NPR) described the nature of the SIP revisions. The notice also specified areas of the SIP submittal which in USEPA's judgment did not comply with the requirements of the Clean Air Act and needed either clarification or correction by the State. The State of Michigan submitted comments and commitments to USEPA in its October 12, 1979, response to the NPR. On March 31, 1980, Michigan submitted revisions to the conditional approval schedules for TSP. In addition, USEPA received several public comments on the Michigan submittal and on USEPA's proposed action on it. Significant comments and USEPA's response to them are discussed where applicable below.

In the August 13, 1979 notice, USEPA indicated that some of the regulations in the State's submittal were preliminarily adopted by the Michigan Air Pollution Control Commission (MAPCC) and would be finally adopted after completion of necessary State administrative procedures. USEPA stated that until all State administrative requirements were satisfied, it would not complete Federal rulemaking on the SIP revisions. On January 9, 1980, USEPA received a letter from the State which demonstrated that all regulations were finally adopted and would take full effect January 18, 1980. A review by USEPA of the regulations finally adopted by Michigan revealed that the final regulations were the same as those submitted April 25, 1979 as a part of Michigan's Part D State Implementation Plan except that Michigan had modified the numbering system slightly and had removed the provisions pertaining to Part C of the Act (Prevention of Significant Deterioration). The rules, however, contain a reference to the same numbers used in the original submittal so that comparison of the rules is easily accomplished. USEPA has reviewed these finally enacted regulations and has determined that the requirement for legal adoption of regulations contained in Section 110(a)(2) of the Clean Air Act has been met. Although Michigan submitted all the rules of the Michigan Air Pollution Control Commission on January 9, 1980 many of these rules had been previously submitted to and approved by USEPA. In this final rulemaking action USEPA is taking no action on the rules already approved by USEPA but will note the recodification of the rules. The only final rulemaking action taken today on Michigan Rules is on those rules which have not been previously approved by USEPA and on which Michigan is relying as part of its control strategy for nonattainment areas. The rules which are not part of Michigan's control strategy for nonattainment areas and which have not been previously approved by US EPA will be addressed in a separate notice of proposed rulemaking.

This Federal Register notice addresses public comments in two parts: (1) General comments on the Michigan SIP and on the criteria used by USEPA to evaluate all SIPs; and (2) Comments on specific portions of the Michigan submittal and on USEPA's evaluation of specific portions of the SIP. The second part of this notice briefly identifies by pollutant or topic the deficiencies cited in the August 13, 1979 Federal Register notice, discusses both the State's response and the response of other commentors, and contains USEPA's response to comments and its final determinations.

USEPA's final determinations take one of three forms: approval, conditional approval, or disapproval. A discussion of conditional approval and its practical effect appears in the July 2, 1979 Federal Register (44 FR 38583) in a supplement to the General Preamble. The conditional approval requires the State to submit additional materials by the specified deadlines negotiated between the State and the USEPA Regional Office. Schedules submitted by Michigan will be proposed for public comment elsewhere in this Federal Register. Although public comment is solicited on the deadlines, and the deadlines may be changed in light of the comments, the State remains bound by its commitment to meet the proposed deadlines, unless they are changed. USEPA will follow the procedures described below when determining if requirements of conditional approval have been met:

1. When the State submits the required additional documentation, USEPA will publish a notice in the Federal Register announcing receipt and availability that the conditional approval is continuing pending USEPA's final action in the submission.

2. USEPA will evaluate the State's submission and public comment on the submission to determine if noted deficiencies have been fully corrected. After review is complete, a Federal Register notice will either fully approve the plan if all conditions have been met, or withdraw the conditional approval and disapprove the plan. If the plan is disapproved the Section 110(a)(2)(I) restrictions on construction will be in effect.

3. If the State fails to submit the required materials according to the negotiated schedule, USEPA will publish a Federal Register notice shortly after the expiration of the time limit for submission. The notice will announce that the conditional approval is withdrawn, the SIP is disapproved, and Section 110(a)(2)(I) restrictions on growth are in effect.

The following chart summarizes the actions taken by USEPA today on the Michigan submittal:

1. Approval

a. Maintenance/malfunction provisions.

b. New source review regulations.

c. Carbon monoxide control strategy for the Saginaw area.

d. Hydrocarbon RACT rules contained in the Michigan Air Pollution Control Commission Rules, Part 6, with the exception of Rules 336.1603 and 1606.

e. Total suspended particulate study schedules for secondary nonattainment areas.

2. Conditional Approval

a. Hydrocarbon RACT rules R 336.1603 and 1606.

b. Total suspended particulates control strategy for primary and secondary nonattainment areas which do not include iron and steel sources.

3. No Action.

a. General requirements of the Clean Air Act which are not Part D requirements (Sections 121, 126, 127, 128 and 110(a)(2)(K).

Rulemaking on the following requirements will be published in a separate Federal Register notice to be published shortly.

b. Ozone control strategy.

c. Transportation control plans for Detroit, Flint, Lansing and Grand Rapids.

d. Inspection/maintenance for the Detroit urban area.

e. Carbon monoxide control strategy for the Detroit area.

f. Particulate regulations for iron and steel industries.

g. Sulfur dioxide control strategy for Ingham County.

Action on these provisions of the plan will be the subject of supplemental notices of proposed rulemaking. Until final action on these provisions, growth restrictions in the City of Detroit nonattainment area will continue for sources emitting photochemical oxidants and carbon monoxide and also in those nonattainment particulate areas where iron and steel industries are located; and in the sulfur dioxide nonattainment area of Ingham County, Michigan, for sources emitting sulfur dioxide.

h. Prevention of Significant Deterioration.

These provisions were withdrawn from the April 25, 1979 submittal by Michigan in a letter dated July 25, 1979. In this letter Michigan requested a delegation of authority to implement the prevention of significant deterioration program. A delegation of this authority was granted by USEPA on September 10, 1979. The notice of such delegation was published at 45 FR 8299 (February 7, 1980).

The following sections will discuss general and pollutant specific deficiencies in the Michigan SIP noted by USEPA in the August 13, 1979, Notice of Proposed Rulemaking, State and public comment in response to that Notice, and USEPA's final determinations and rulemaking actions. USEPA has determined that good cause exists for making these revisions immediately effective. By making this final rulemaking immediately effective, some of the restrictions on industrial growth contained in section 110(a)(2)(I) of the Clean Air Act will be lifted from the State of Michigan. These restrictions are imposed for failure to have a State Implementation Plan which meets the requirements of Part D after the final date for SIP approval specified in the Act. USEPA has determined that a major portion of the Michigan State Implementation Plan meets the requirements of Part D. Therefore, it would be contrary to the public interest to continue the restrictions on industrial growth in all nonattainment areas for thirty days after the publication of this notice.

Plan Requirements for Nonattainment Areas

In addition to the general requirements applicable to all State Implementation Plan revisions, the revised plan must satisfy the requirements of Part D of the Act. In the August 13, 1979 Notice of Proposed Rulemaking, USEPA indicated that the proposed revision to the Michigan SIP did not meet the requirements of section 172(b)(9) of the Act because it did not include an identification and analysis of the air quality, health welfare, economic, energy, and social effects of the plan provisions chosen, the alternatives considered, and a summary of the public comment on the analysis. USEPA believes that the State has satisfied these requirements through discussions in the original SIP submittal, the submittal of supplemental information identifying and analyzing the impact areas, and the submittal of a summary of public comments.

In addition to the comments submitted by the State of Michigan and the public specifically addressing the August 13, 1979 Notice of Proposed Rulemaking (44 FR 47350), one commentor submitted extensive national comments and requested that the comments be considered part of the record for each state plan. Although some of the issues are not relevant to provisions in Michigan's submission USEPA notified the public on its response to these comments at 45 FR 11472, 11474 (February 21, 1980).

Total Suspended Particulates

Part D of the Clean Air Act requires State Implementation Plans to include strategies and regulations adequate to insure attainment of the Primary National Ambient Air Quality Standards as expeditiously as practicable but not later than December 31, 1982, and in the interim, to provide reasonable further progress toward attainment through the application of reasonably available control technology (RACT). The statute requires that the secondary standards be attained within a reasonable time. Where attainment cannot be demonstrated despite the application of reasonably available control technology to traditional sources of particulate matter, USEPA will accept as a basis for approval a commitment by the State to conduct additional studies on the causes for particulate nonattainment, including the degree to which nontraditional area sources of particulate matter affect air quality, and to develop and to submit to USEPA additional enforceable strategies adequate to demonstrate attainment of the primary standards by the statutory attainment date.

Primary and Secondary Nonattainment Areas

Four areas of the State of Michigan including portions of the Detroit metropolitan area, Saginaw, Flint, and Albion, have been designated as nonattainment for the primary particulate National Ambient Air Quality Standards. An additional 20 areas are designated as nonattainment for the secondary particulate standard. These areas are delineated at 40 CFR Part 81.

As discussed in the August 13, 1979, Federal Register the State's analysis of the designated nonattainment areas indicates that despite the application of reasonably available control technology through new regulations, together with existing regulations, the particulate SIP may not be adequate to provide for attainment of the primary or secondary TSP NAAQS by December 31, 1982. Therefore, the Michigan SIP contained commitments to conduct additional studies including a study on nontraditional source control, to adopt industrial fugitive regulations that represent RACT for traditional sources, and to adopt additional controls beyond RACT on traditional sources if necessary. USEPA proposed to conditionally approve these commitments if the State submitted a more detailed schedule for the completion of the studies and the adoption of any necessary new regulations.

The State's October 12, 1979 response satisfactorily outlined a detailed plan to study the causes of particulate nonattainment and to develop strategies to attain and maintain the particulate standards. The State submitted revised schedule dates on March 31, 1980. The studies will focus on the ambient impact from nontraditional sources of particulates, on methods of controlling these sources, and on the contribution of traditional sources with RACT controls to particulate nonattainment.

The State has committed itself to complete additional studies in the Detroit area for an attainment strategy by June 1980 and to adopt statewide industrial fugitive regulations and any other regulations necessary to attain and maintain the particulate NAAQS. The State has also committed itself to submit to USEPA the adopted industrial fugitive regulations by January 1, 1981.

Because the State has been unable to demonstrate attainment despite the application of RACT to traditional sources of particulates and has made a satisfactory commitment to study the causes of particulate nonattainment and to adopt additional regulations to achieve attainment, USEPA approves the State's approach to demonstrating attainment. As discussed below, USEPA conditionally approves the Michigan particulates SIP for those nonattainment areas which do not include iron and steel sources. USEPA is taking no action at this time on the particulate plan as it is applied to iron and steel sources. Therefore, the growth prohibition of Section 110(a)(2)(I) of the Act continues to apply only in those particulate nonattainment areas containing iron and steel sources.

This notice follows the general format of the August 13, 1979 Federal Register. No public comments other than the State's response were received by USEPA on the TSP portion of Michigan's SIP.

Statewide

On January 9, 1980 the State submitted the officially adopted rules of the Michigan Air Pollution Control Commission. Part 3 of these rules covers emission limitations and prohibitions for particulate matter. Specific Statewide emission limitations for traditional sources are contained in Rule 336.1331 (formerly rule 336.44). This rule was amended and proposed for adoption by the State in February 1979 and submitted to USEPA on April 25, 1979. USEPA proposed approval of the amended rule in the August 13, 1979 Federal Register. The officially adopted rule submitted to USEPA on January 9, 1980, is essentially identical to the previously adopted rule. Therefore, USEPA approves Rule 336.1331 as meeting the requirements of the Clean Air Act with the exception of specific regulations covering sources in the iron and steel source category. As discussed above, USEPA is taking no action on this source category at this time.

Detroit

The August 13, 1979, Notice of Proposed Rulemaking identified deficiencies in the Michigan strategy which USEPA stated must either be clarified or be corrected. USEPA noted that while fugitive particulate emissions appear to be a significant contributor to nonattainment in the Detroit metropolitan area and may be an important component of the nonattainment problem in other areas, the State has not yet developed regulations to control particulates from these sources.

The April 25, 1979 submittal from the State contained commitments by the State to develop industrial fugitive regulations for at least the primary nonattainment area in Wayne County (Detroit) by October 1, 1979, to adopt site specific abatement orders, and to conduct additional studies, including the study of nontraditional source impacts. USEPA found this approach generally acceptable but noted the following deficiencies in the August 13, 1979 Federal Register.

1. The commitment by the State of Michigan to develop and adopt industrial fugitive regulations was not accompanied by a detailed schedule for the completion of the proposed and ongoing studies and for the adoption of any additional regulations beyond RACT that are shown to be necessary to demonstrate attainment. A detailed schedule must contain projected dates for all necessary actions to be carried out by the State of Michigan prior to submittal of a SIP revision to USEPA.

State Response

Since the publication of the Notice of Proposed Rulemaking, the State has submitted a draft of its industrial fugitive rules. In the draft rules the State has extended the rules' coverage to all primary and secondary particulate nonattainment areas. USEPA had indicated in the Notice of Proposed Rulemaking that the State had committed itself to apply these regulations at least in the primary nonattainment area in Wayne County.

The rules have been adopted by the Commission for the purpose of holding public hearings. Public hearings on the rules were held on January 22, 24, and 28, 1980. The remainder of the rule adoption schedule committed to by Michigan in its submittals of October 12, 1979 and March 31, 1980 includes the following items and completion dates:

1. Conduct public hearings throughout the State ..... Jan. 1980
2. Prepare a summary of the public comments and revise rules if appropriate ..... Feb. 1980
3. Formal rule adoption by the Commission ..... Apr. 1980
4. Obtain approval from the legislative Service Bureau, Attorney General's Office and Joint Legislative Rules Committee ..... Aug. 1980
5. File rules with Secretary of State and submit to USEPA for approval ..... Jan. 1981

In regards to the need for additional studies in the Detroit area, the State has committed itself to analyze the results of filter analysis, perform particle size distribution work, refine their source emission inventories and examine the appropriate meteorological parameters in order to demonstrate the adequacy of the control strategy. On March 31, 1980, the State submitted revisions to the schedule for the Detroit studies. Accordingly, the Air Quality Division commits itself to the following schedule:

Item	Completion date
1. Particle size distribution report	Feb. 1980.
2. Refinement of the emission inventory	June 1980.
3. Assessments of meteorological variables	June 1980.
4. Analysis of the microscopy report	June 1980.
5. Submit study results to USEPA	Sept. 1980.

USEPA Response and Final Determination

USEPA believes that both the State's commitment and schedule to adopt industrial fugitive regulations are acceptable. Therefore, USEPA approves the particulate control strategy for Detroit on the condition that the State submit its statewide, finally adopted, industrial fugitive regulations to USEPA by January 1, 1981. A notice soliciting public comment on the acceptability of the schedule to adopt the industrial fugitive regulations and to conduct further studies appears elsewhere in today's Federal Register.

2. In the Notice of Proposed Rulemaking, USEPA requested a commitment from the State to develop and adopt nontraditional area source controls and point source controls more stringent than RACT in the Detroit area if these controls are necessary to demonstrate attainment.

State Response

The State has committed itself to drafting and proposing additional regulations necessary for attainment of the primary NAAQS as expeditiously as

possible and within a reasonable time for the achievement of secondary standards. The State predicates this commitment upon the completion of the proposed studies.

USEPA Response

Michigan has committed to conduct additional studies in the Detroit area and has committed to review and adopt nontraditional source controls and any necessary additional regulations for controls beyond RACT. The Clean Air Act mandates that the TSP NAAQS be attained in all nonattainment areas by December 31, 1982, and the secondary standards as expeditiously as practicable. If the State of Michigan is unable to demonstrate attainment by the application of RACT and the adoption and enforcement of industrial fugitive regulations, the State will be required to submit further regulations in order to demonstrate attainment.

3. USEPA commented in the August 13, 1979 Notice of Proposed Rulemaking that the Michigan submittal did not contain specific test methods for measurement of visible emissions from either continuous or intermittent sources of particulates. USEPA stated that acceptable test method or methods for these source categories must be promulgated and submitted to USEPA as a portion of the SIP.

State Response

Michigan, in its response, directed our attention to Rule 336.1303, "Grading Visible Emissions", for visual emission observations of stationary sources. This test method is on file with the Commission. A copy of the method was resubmitted to USEPA in a letter dated February 6, 1980.

USEPA Response

USEPA's assessment that the submittal did not contain a test method was in error. The Michigan submittal referenced a rule on file with the Commission.

USEPA has reviewed the visible emission test method and finds it acceptable as an enforceable compliance test method for both continuous and intermittent sources.

As previously noted, no action is being taken on iron and steel sources. Specific deficiencies in the opacity regulations for iron and steel sources will be proposed for comment with the remainder of the rules covering these sources in a separate Federal Register package.

Saginaw, Flint, and Albion

The State of Michigan plans to develop specific abatement orders for controls beyond RACT which would apply to individual sources located in the Saginaw, Flint and Albion nonattainment areas, including sources of fugitive particulate emissions, that have been shown to cause or contribute to violations of the National Ambient Air Quality Standards. USEPA found this approach generally acceptable but noted the following deficiencies in the Notice of Proposed Rulemaking:

1. Specific abatement orders that require controls beyond RACT must be codified in a manner enforceable by the State and submitted to USEPA as a SIP revision before the State can claim emission reduction credits for control at these facilities.

State Response

The State has committed itself to submit the abatement orders or consent agreements which require controls beyond RACT along with air quality demonstrations for companies in the primary nonattainment areas of Flint, Albion, and Saginaw. All orders for these areas have been approved by the Air Pollution Control Commission and the air quality demonstrations supporting these orders have been completed. On March 10, 1980, the State submitted the abatement order for the Albion nonattainment area.

USEPA Response

The State has indicated that it is relying on these abatement orders to demonstrate attainment. Further, the State has committed to submit these abatement orders for specific sources and the accompanying attainment demonstrations for Saginaw, Flint, and Albion. The State's abatement order or consent agreement mechanism has been determined to provide legally enforceable emission limitations at the State level. The submittal of these orders or agreements to USEPA as site specific SIP revisions will also insure that these agreements are a legally enforceable part of Michigan's SIP. The approval or disapproval of specific abatement orders will be the subject of separate Federal Register notices.

2. Industrial fugitive regulations must be applicable to all particulate nonattainment areas unless the source specific regulations developed for these areas are sufficient to demonstrate attainment of NAAQS. The fugitive regulations should include control of particulates from storage piles, plant roads, loading and unloading operations, mineral handling and processing operations and emissions from building openings.

State Response

Michigan stated that the industrial fugitive rules that are now in the process of development and adoption will apply to all primary and secondary nonattainment areas in the State. In addition, for the Saginaw, Flint, and Albion nonattainment areas, the State plans to develop specific abatement orders which are beyond RACT for individual sources, including sources of fugitive particulate emissions, that have been shown to cause or contribute to violations of the NAAQS. On March 10, 1980, the State submitted the abatement order for the Albion nonattainment area.

USEPA Response

Michigan's response that the industrial fugitive regulations proposed for adoption will apply to all primary and secondary nonattainment areas and the commitment to develop and to propose adoption of specific abatement orders in Saginaw, Flint, and Albion is acceptable. The abatement orders will be reviewed as site specific SIP revisions and will be the subject of separate Federal Register notices.

Secondary Nonattainment Area Studies

Michigan's plan for secondary nonattainment areas consists of a commitment to conduct additional studies in all secondary nonattainment areas, and a commitment to develop regulations if necessary. The studies will include updating the point source emission inventory, adding area sources to the inventory, undertaking additional modeling and conducting particle microscopy work. The submittal includes a schedule for completing these studies which divides the secondary nonattainment areas into four categories based on the number of samples and the magnitude of the readings exceeding the standards. The studies in each of the four categories will be completed on June 30, 1980, October 30, 1980, February 28, 1981, and June 30, 1981, respectively.

The State has committed itself to develop enforceable control orders or additional emission limitations within one year of the completion of the studies for each area, as noted above. A commitment is also made to attain the secondary standards within four years of the completion of the studies in each area. Thus, the secondary standards will be attained within a period between June 1984 and July 1985.

USEPA proposed in the August 13, 1979 Federal Register to approve the schedule and the commitments to analyze, select and adopt control measures for the secondary particulate nonattainment areas on the condition

that key milestones are identified for evaluating progress in the development of a SIP to attain the secondary standards.

State Response

The types of studies that are contemplated for all of the secondary areas include a refinement of the emission inventory, an analysis of the impact of meteorological variables on the sample results, an analysis of the microscopy report and an examination of the desirability of conducting additional dispersion modeling.

The study schedule identified in the SIP at Table 2.14 on page 2-53 envisages completion of all of the items listed above within the specified time frame. The State reinforced its commitment to complete the studies according to schedule, but stated that interim milestones were not necessary.

USEPA Response

USEPA has reviewed the State's commitment and the time schedule for completing additional studies contained in the SIP. USEPA finds the State's reinforcement of their commitment to the necessary elements of the required additional studies is satisfactory without the addition of interim milestones. Therefore, USEPA approves the secondary nonattainment area study commitments. The adoption of any necessary additional control measures and the attainment demonstration will be the subject of a separate Federal Register notice.

Modeling Demonstrations

In the Notice of Proposed Rulemaking, USEPA stated that the State must provide a demonstration of attainment of the particulate National Ambient Air Quality Standard for all currently designated nonattainment areas. Estimates of industrial fugitive emission impacts must be supported by a comprehensive analysis of meteorological data, monitored air quality data, and filter analysis. A summary of any further modeling analyses should be submitted. The summary should include a map identifying monitored and modeled receptor locations and the highest predicted annual concentrations and highest and second highest concentrations predicted in the short term analysis at all receptors on all days modeled. A description of the derivation and use of background concentrations should be included.

State Response

The State pointed to previous difficulties with modeling in the secondary nonattainment areas, and committed itself to provide an attainment demonstration utilizing the best available analytical tools. This includes filter analysis, meteorological analysis and the compilation of microinventories.

USEPA Response

Becaue of the particular problems and constraints inherent in the previous dispersion modeling analysis conducted by the State, USEPA will not mandate an air quality demonstration supported by modeling. The alternative analytical tools identified by the State are technically sound and should provide the information necessary to support any additional necessary control measures. However, the filter analysis method on which the State places emphasis may not be sufficient as the only analytical tool for situations in which traditional sources are the prime contributors to nonattainment. For such circumstances the adequacy of a filter analysis alone may be restricted by (1) the limited number of available sampling sites for analysis, which may not provide an adequate picture of source culpability, (2) the limited number of filters analyzed per site which may not cover the appropriate set of meteorological conditions and (3) the limited number of filters analyzed over time may not adequately address the annual standard.

USEPA Final Determination

USEPA conditionally approved Michigan's control strategy for the attainment of the primary and secondary TSP NAAQS in particulate nonattainment areas that do not contain iron and steel sources with the condition that Michigan conduct the necessary particulate studies in the Detroit area and adopt final industrial fugitive regulations that represent RACT for traditional sources. The State must submit these regulations to USEPA by January 1, 1981.

USEPA's action today finally approves the Michigan TSP study schedules for attainment of the secondary TSP NAAQS.

Sulfur Dioxide

Portions of Midland and Ingham Counties were designated as nonattainment for the sulfur dioxide National Ambient Air Quality Standards. These two areas were designated nonattainment because a source in each area, in contravention to Section 123 of the Act, was utilizing a supplementary control system (SCS) to demonstrate attainment of the sulfur dioxide (SO_2) National Ambient Air Quality Standards (NAAQS). At the time of the designation neither source was meeting the emission limitations in the federally approved SIP. The State's control strategy for these SO_2 nonattainment areas was to rely on the existing SO_2 emission limitations in its present regulations while requiring the two sources in the nonattainment areas to apply "continuous emission control systems," to meet those emission limitations. The requirement of "continuous emission control" systems was to be implemented through individual Consent Orders entered into by the two sources and the Michigan Air Pollution Control Commission (MAPCC) and submitted to USEPA as SIP revisions.

Ingham County

In the August 13, 1979 Notice of Proposed Rulemaking USEPA stated that the existing SIP would be adequate to attain and maintain the SO_2 NAAQS when all sources are complying with the applicable rules and are utilizing constant emission controls; and that as a result, "no further rulemaking was necessary".

On August 22, 1979 Michigan submitted a Consent Order entered into by the Michigan Air Pollution Control Commission (MAPCC) and the Lansing Board of Water & Light (Board), located in the City of Lansing, Ingham County. The Board had been utilizing an SCS to keep from violating the SO_2 NAAQS instead of meeting the emission limitations in the federally approved SIP. The Order and technical support submitted with the Order demonstrated that the Board's recent compliance with the emission limitations in the existing SIP was not adequate to protect the NAAQS since a potential for violation of the SO_2 NAAQS occurred as a result of aerodynamic plume downwash at the facility. The Order to correct the downwash required additional controls in the form of GEP stacks.

American Lung Association of Michigan commented on the strategy and challenged USEPA's statement that the existing SIP is adequate and that no further rulemaking is necessary. USEPA agrees with American Lung that technically such statement was incorrect insofar as the nonattainment area in Ingham County was concerned. The State of Michigan also commented that it agreed with American Lung's evaluation. In the August 13, 1979 Notice of Proposed Rulemaking USEPA was requesting comment on Michigan's SO_2 control strategy while emphasizing that it was not necessary to take any additional rulemaking action on Michigan's existing federally approved

regulations controlling SO_2 emission limitations from power plants. Sulfur dioxide emission limitations for power plants are contained in Tables 3 and 4 of Rule 49 (R. 336.49). These tables and rule have been recodified in the Michigan submittal of January 9, 1980 as Tables 41 and 42 of Rule 401 (R. 336.1401).

USEPA finds that Michigan's control strategy for the Ingham County nonattainment area (requiring the Board to complete good engineering practice (GEP) designed stacks by December 31, 1982 to eliminate the downwash problem in addition to meeting the emission limitations in the federally approved SIP) is adequate to demonstrate attainment of the SO_2 NAAQS by December 31, 1982.

American Lung in its comments also asserted that the Board's use of a SCS while the GEP stacks are being built was prohibited under the Clean Air Act. In a letter dated February 13, 1980, addressed to the Regional Administrator, Michigan withdrew this part of the SIP revision from review by USEPA. Therefore, that provision will not be a part of the federal plan. The provision remains, however, as a matter of State law under the stipulation signed by MAPCC and the Board.

USEPA, in a Notice of Proposed Rulemaking to be published shortly, is proposing to approve the Lansing Board of Water & Light Order under Part D requirements on the basis that the Order requires the Board to continue to meet the existing emission limitations in the federally approved SIP while at the same time it imposes additional requirements on the Board in order to provide for the attainment of the SO_2 NAAQS by December 31, 1982. Under Part D of the Act when a source is meeting its existing requirements, the source may be granted additional time to meet any additional requirements which are necessary to provide for attainment of the NAAQS. See General Preamble for Proposed Revisions for Nonattainment Areas (44 FR 20371, 20373, April 4, 1979).

USEPA Determination

USEPA is not taking action in this rulemaking notice on Michigan's SO_2 control strategy for the nonattainment area of Ingham County. The strategy which is contained in a Consent Order and which requires a source to construct GEP stacks to correct a demonstrated downwash problem is the subject of a separate notice of proposed rulemaking. Until final action on the Order USEPA will be unable to enforce Michigan's control strategy. Therefore, final approval by USEPA on Michigan's control strategy for Ingham County will be contained in USEPA's final rulemaking on the Consent Order which implements that control strategy.

Midland County

A portion of Midland County was designated nonattainment because The Dow Chemical Co. (Dow), instead of meeting its emission limitation under the existing federally approved SIP, was using a SCS to demonstrate attainment of the NAAQS.

Michigan's control strategy is to require Dow to come into compliance with the existing emission limitations in the federally approved SIP by either burning compliance fuel or purchasing processed steam and electricity from a nuclear power facility still under construction. To implement its control strategy Michigan referenced in its Part D submittal a Consent Order entered into by Dow and the MAPCC on February 13, 1979. This Order had been previously submitted to USEPA as a site specific SIP revision on February 14, 1979.

USEPA disapproved this Order as a site specific SIP revision because (1) it lacked a demonstration that the primary and secondary NAAQS would be attained and maintained without use of SCS; (2) it did not provide for continuous emission reduction; and (3) it did not contain emission limitations for sulfur dioxide and particulates. See 45 FR 19566, March 26, 1980.

The Order was also reviewed to see if it met Part D requirements of the Act. In a Notice of Proposed Rulemaking published at 44 FR 9752 (February 13, 1980) USEPA proposes to disapprove the order because it grants Dow additional time to meet existing emission limitations.

As noted in the February 13, 1980 Notice of Proposed Rulemaking it is USEPA's position that Congress, in passing the 1977 Amendments, did not intend to provide sources more time to come into compliance with existing emission limitations. See General Preamble for Proposed Revisions for Nonattainment Areas (44 FR 20371, 20373, April, 1979).

American Lung commented that Michigan's sulfur dioxide control strategy does not provide for reasonable further progress by requiring sources in the nonattainment areas to adopt reasonably available control technology (RACT). USEPA has determined that the emission limitations in the federally approved SIP represent RACT and that reasonable further progress is met by Michigan's new source review regulations. These regulations require emission offsets of greater than one for one and also require minor sources to be included in the permit program.

It is USEP's position that there is no reason to question the adequacy of the emission limitations in Michigan's existing federally approved regulations. The Dow Chemical Co. has never met those limitations which call for Dow to use fuel with a sulfur content not to exceed 1.0 percent. The technical support submitted with those regulations demonstrated that enforcement of those regulations will protect the ambient air quality in Midland County.

On March 12, 1980 during the comment period on the February 13, 1980 Notice of Proposed Rulemaking, Michigan withdrew the Order as a SIP revision to meet Part D requirements on the basis that it was not necessary under Part D inasmuch as the enforcement of the existing SO_2 emission limitations was adequate to demonstrate attainment. USEPA agrees with the State's assessment. Therefore, no further rulemaking is necessary. A notice of withdrawal of USEPA's rulemaking in the Dow order as a Part D SIP revision will be published in the Federal Register shortly.

Ozone

As indicated in the August 13, 1979 Notice of Proposed Rulemaking, the Michigan submittal did not include ozone design values for each nonattainment area, a determination of the Volatile Organic Compound (VOC) reduction requirements of each area, or a demonstration of attainment of the ozone standard. USEPA proposed rulemaking only on the controls for stationary sources of VOC. Consequently, the measures approved in the discussion below constitute only a portion of the Michigan plan for attaining the ozone standard. Subsequent to the publication of the Notice of Proposed Rulemaking, the State submitted an ozone attainment demonstration which USEPA is in the process of reviewing. This final attainment demonstration and the adequacy of the ozone plan as a whole will be proposed for comment in the separate Federal Register notice. In addition, USEPA will propose rulemaking on Michigan's transportation control plans in a separate Federal Register notice to be published shortly.

Hydrocarbons From Stationary Sources

Section 172(b)(2) of the Clean Air Act requires the application of reasonably available control technology to stationary sources of VOC in nonattainment areas. USEPA has developed Control Techniques

Guidelines (CTGs) which provide information on available air pollution control techniques, and contain recommendations on what USEPA calls the "presumptive norm" for RACT. Where State regulations are not supported by the information in the CTGs, the State must provide an adequate demonstration that its regulations represent RACT, or amend the regulations to be consistent with the information in the CTGs. An explanation of CTGs and their practical effect is contained in a September 17, 1979 supplement (44 FR 53761) to the General Preamble (44 FR 20371).

The minimum acceptable level of stationary source control for ozone SIPs includes RACT requirements for VOC sources covered by CTGs the USEPA issued by January 1978 and schedules to adopt and submit by each future January additional requirements for sources covered by CTGs issued the previous January. The submittal date for the first set of additional RACT regulations was revised from January 1, 1980 to July 1, 1980 by an August 28, 1979 Federal Register notice (44 FR 50371). The Michigan submittal includes a commitment by the State to adopt any additional rules representing RACT on stationary sources of VOC for which USEPA issues CTGs. The Administrator approves this commitment by the State as part of the federally approved Michigan State Implementation Plan.

Approval of the ozone portion of the Michigan plan is contingent, however, on the submittal of the additional RACT regulations which are due July 1, 1980 (for CTGs published between January 1978 and January 1979). In addition, by each subsequent January beginning January 1, 1981, RACT requirements for sources covered by CTGs published by the preceding January must be adopted and submitted to USEPA. The above requirements are set forth in the "Approval Status" section of the final rule. If RACT requirements are not adopted and submitted to USEPA according to the time frame set forth in the rule, USEPA will promptly take appropriate remedial action.

Michigan submitted eighteen new rules containing stationary source controls representing RACT. These rules provide emission limitations and prohibitions for existing sources of volatile organic compounds. USEPA proposed to approve fourteen of these rules in the August 13, 1979 Notice of Proposed Rulemaking. No public comments were received on these rules or on USEPA's proposed approval. Therefore, USEPA approves Rules 336.1601, 1602, 1604, 1605, 1607, 1608, 1609, 1611, 1612, 1613, 1614, 1615, 1616, and 1617 as part of the federally approved Michigan SIP. USEPA also proposed to approve Rules 336.1603, 1606, 1610, and 1618 if the State clarified or corrected portions of each rule which, in USEPA's judgment, were deficient. On October 12, 1979, the State responded to USEPA's proposed rulemaking. With the exception of comments on Rule 336.1610 by the Ford Motor Company, no public comments were received on these four regulations or on USEPA's proposed action. As discussed below, USEPA approves Rule 336.1618 based on the State's response and Rule 336.1610 based on the State's response and on the Ford Motor Company's comments. Based on the State's response, Rules 336.1603 and 1606 are approved subject to the State satisfying the conditions outlined in the discussion below.

The following discussion identifies the deficiencies described in the August 13, 1979 Notice of Proposed Rulemaking, summarizes the State's response and any public comments, and contains USEPA's response and final determination.

1. Although Rule 336.1603 specifies final compliance dates for sources regulated under these rules, it does not contain the interim increments of progress required by 40 CFR Part 51.15.

State Response

The State of Michigan has made a commitment to submit detailed compliance schedules containing the increments of progress required by 40 CFR Part 51.15 within one year of the effective date of this rule for sources with final compliance dates prior to December 31, 1982, and by not later than 18 months from the effective date of this rule with final compliance dates beyond December 31, 1982.

USEPA Response and Final Determination

Based on this commitment, USEPA conditionally approves Rule 336.1603 as part of the federally approved Michigan SIP. USEPA also approves the two-tier schedule committed to by the State for satisfying this condition. The schedule is identical to the schedule proposed by USEPA in the August 13, 1979 notice. By March 31, 1981, the State must submit detailed compliance schedules for sources with final compliance dates prior to December 31, 1982. By September 30, 1981, the State must submit detailed compliance schedules for sources with final compliance dates beyond December 31, 1982.

2. Rule 336.1606 exempts gasoline dispensing facilities in major urban areas from the requirements for a vapor balance system when loading gasoline into existing stationary vessels of more than 2,000 gallons capacity if the throughput of the facility is less than 250,000 gallons per year. The exemption from controls for facilities with existing gasoline dispensing storage tanks of 2,000 gallon capacity or more and a throughput of less than 250,000 gallons per year is not technically supported by the State as representing RACT.

USEPA believes that vapor balance systems should be required for all existing gasoline dispensing storage tanks of 2,000 gallon or larger capacity regardless of throughput. USEPA has promulgated such a requirement in the past under section 110(c) of the Clean Air Act at 40 CFR Sections 52.336, 52.787, and 52.1144. In USEPA's judgment, the widespread implementation of vapor balance systems on tanks of 2,000 gallons or greater regardless of throughput demonstrates that this control is reasonable.

USEPA asked that the State of Michigan either submit documentation technically supporting its proposal as representing RACT, document that allowable emissions resulting from the use of this rule differ less than five percent from the allowable emissions resulting from a regulation which requires vapor balance systems on all gasoline storage tanks with a capacity of 2,000 gallons or more, or commit itself to extend the coverage of the rule to all gasoline dispensing facilities with storage tanks of 2,000 gallon or more capacity.

State Response

The State has made a commitment to either develop and submit to the Michigan Air Pollution Control Commission a new rule with a 120,000 gallon per year throughput exemption, or provide technical support demonstrating that allowable emissions resulting from the use of its existing rule deviate less than five percent from USEPA's recommended level of control. The State has made a commitment to fulfill these conditions within one year of the effective date of this rulemaking.

USEPA Response and Final Determination

USEPA finds the alternative commitments made by the State of Michigan acceptable. An August 17, 1979 memorandum by Richard Rhoads, Director of USEPA's Control Programs Development Division, on "Evaluation of 10,000 gallon per Month Thruput Exemption for Petroleum Marketing Operations" compares controlled

emissions using a 2,000 gallon capacity tank size exemption with controlled emissions using a 10,000 gallon per month (or 120,000 gallon per year) throughput exemption. This memorandum indicates that a 10,000 gallon per month throughput exemption results in 8 to 10 percent of the total national throughput being uncontrolled. According to the memorandum, a 2,000 gallon capacity tank size exemption results in 3 to 5 percent of the total national throughput being uncontrolled. Therefore, the allowable emissions resulting from the use of 10,000 gallon per month throughput exemption are within 5 percent of the allowable emissions resulting from the use of a 2,000 gallon capacity tank size exemption. Guidance contained in a June 30, 1978 memorandum by Richard Rhoads on "Vapor Recovery Regulations Required to Meet RACT Requirements for the 1979 SIP" indicates that if the impact on emission varies imperceptibly, USEPA can approve State regulations which differ only marginally from USEPA's technically supported levels of control without requiring technical justification from the State. The Rhoads' memorandum further indicated that as a guide, USEPA considers an impact on emissions of less than 5 percent imperceptible. Therefore, USEPA finds Michigan's commitment to develop a new rule with a 120,000 gallon per year throughput exemption acceptable. USEPA finds equally acceptable Michigan's alternative commitment to provide technical support demonstrating that allowable emissions resulting from the application of its existing rule are within five percent of the allowable emissions resulting from a 2,000 gallon tank size capacity exemption.

Based on this commitment and schedule, USEPA conditionally approves Rule 336.1606 as part of the federally approved Michigan SIP.

Although the State does not commit itself to promulgate the new rule, USEPA believes that the State's commitment and schedule to submit any necessary regulations to the Michigan Air Pollution Control Commission is adequate. USEPA recognizes that the State cannot legally prejudge the outcome of statutorily mandated regulatory proceedings. Nonetheless, in order to guarantee that the deficiency is adequately addressed and that the plan is adequate to satisfy the requirements of the Act, USEPA imposes the additional condition that any necessary regulation be finally promulgated by the State and submitted to USEPA by September 30, 1981.

In establishing the date by which any necessary regulation must be promulgated, USEPA has taken into consideration the lengthy Michigan Air Pollution Control Commission rulemaking procedures which require review of regulations by several State offices and committees and approval by the Michigan Legislature. A notice soliciting public comment on the acceptability of this schedule will appear in a separate Notice of Proposed Rulemaking published elsewhere in today's Federal Register.

3. Rule 336.1610 establishes an emission limitation for can end sealing of 4.2 pounds of VOC per gallon of coating less water prior to December 31, 1985 and 3.7 pounds of VOC per gallon of coating less water thereafter. The State's April 25, 1979 submittal did not technically support as representing RACT either the 4.2 pound emission limitation or the schedule for implementing a 3.7 pound emission limitation.

Technical support contained in the CTG document for can coating, of which can end sealing is a subcategory, demonstrates that RACT for can end sealing compounds is 3.7 pounds of VOC per gallon of coating less water. Further, the data in the CTG document indicates that final compliance can be achieved by the can coating source category by December 31, 1982. Therefore, USEPA asked the State either to technically support its rule as representing RACT for can end sealing or to demonstrate that even with this emission limitation for can end sealing, allowable emissions for the entire can coating source category differ by less than 5 percent from the allowable emissions resulting from the application of the presumptive norms supported in the CTG.

In addition to this issue, USEPA identified three issues related to Rule 336.1610 and requested public comment. These three issues are discussed below under the USEPA's response and final determination or Rule 336.1610.

State Response

In its October 12, 1979 response, the State demonstrated that for the can coating source category the difference in allowable emissions resulting from the application of its rules rather than the CTG's presumptive norms is less than 5 percent. In order to make this demonstration, the State examined current emissions inventories as well as projections of 1982 emissions for the four facilities in Michigan with can coating operations. In addition, the State compared projections of 1982 emissions from can end sealing using the emission limitation Michigan rule and using the recommended limit in the CTG.

With the exception of the emission limitation for can end sealing, Michigan's emission limitations for all other can coating operations are identical to the emission limitations technically supported in the CTG. Only two of the four can coating facilities in Michigan utilize can end sealing compounds. The State's comparison of 1982 projected emissions indicated that in the can coating category the difference between the allowable emissions resulting from the use of the Michigan can end sealing limitation of 4.2 pounds of VOC per gallon of coating less water and from the use of the CTG supported limitation of 3.7 is only 4.3 percent.

USEPA Response

USEPA has reviewed the State's demonstration and determined that it shows that allowable emissions resulting from the application of all Michigan rules for can coating operations are within five percent of the allowable emissions resulting from the application of the presumptive norms supported by the CTG. Therefore, USEPA approves the can end sealing emission limitations and schedule for their application in Rule 336.1610 as part of the federally approved Michigan SIP. A more detailed discussion of USEPA's review of the Michigan demonstration is contained in the rationale document located in the docket for this rulemaking.

In addition to the issue discussed above, USEPA highlighted and solicited public comment on three issues related to Rule 336.1610.

a. Rule 336.1610 contains two types of volatile organic compound emission limits for the surface coating of cans, coils, large appliances, metal furniture, magnet wire, fabric, vinyl, and paper. One limit is based on the maximum content of VOC in any coating applied and the second is based on a daily weighted average of all gallons of coating applied during any 24-hour period. USEPA noted in the August 13, 1979 Federal Register that averaging time is not addressed in the recommended CTG emission limits. USEPA also specifically identified cases in which either one or both of the emission limits in Rule 336.1610 vary from the emission limits recommended by the CTG.

Only the State of Michigan submitted comments on this issue. The State indicated that the emission control approach in Rule 336.1610 is not contradictory to the emission limits recommended in the CTG. Further, the

State argues that the averaging times specified in the rule are consistent with the overall oxidant control strategy. USEPA's review of the Michigan rule indicates that the State is correct. Seven of the eight surface coating operations must comply with emission limitations which reflect the limitations recommended in the CTG. The limitations for the eighth coating operation, vinyl surface coating, are discussed below in item b.

In an October 6, 1978 memorandum by Richard Rhoads containing "Comments on Auto Industry Proposals" and a November 21, 1978 memorandum by Richard Rhoads on "RACT Options for Can Coaters", USEPA allowed the use of daily weighted averaging for can and auto coaters. USEPA has subsequently determined that the use of daily weighted averaging is appropriate for all coating operations. USEPA bases this determination on the similar types and numbers of formulation for all surface coating operations.

b. Rule 336.1610 contains an emission limitation for vinly coating of 4.5 pounds of VOC per gallon of coating applied minus water. Because there is only one vinyl coating plant in Michigan, this limit represents a site specific RACT determination for the Ford Motor Company vinyl coating plant in St. Clements, Michigan. Based on information in the CTG and from other plants engaged in the coating of automobile and industry-related products, USEPA questioned discrepancies in the data used to determine the emission limitation. these discrepancies related to the density of the coatings and the percent of solids by volume in the coatings. Both the State and the Ford Motor Company submitted comments on these issues.

The percent solids and the average solvent density relied on by the State to establish its emission limitation vary from the data used in the development of the presumptive norm in the CTG. The CTG for surface coating of vinyl recommends an emission limitation of 3.8 lbs/gallon. This emission limitation is based on the coatings containing 15 percent volume solids, an average solvent density of 7.35 lbs/gallon, and use of an add-on control device with an overall control efficiency of 81 percent.

In determining the vinyl coating emission limit, the State relied on information submitted to it by the Ford Motor Company. The State used 8.5 percent volume solids as the average composition of all coating utilized at the Ford vinyl coating plant. The State used 6.74 pounds per gallon as the composite density of all solvents. Finally, the State based its determination on the use of add-on control devices with an overall control efficiency of 81 percent. Based on this data, the State concluded that an emission limitation of 4.5 lbs/gallon represents RACT for this vinyl coating plant. The comments and technical information submitted by the Ford Motor Company explain the discrepancies in data cited by USEPA in the Notice of Proposed Rulemaking and substantiate the data used by the State. A detailed discussion of USEPA's review of the data submitted by Michigan and the Ford Motor Company is contained in the rationale document located in the docket for this rulemaking.

USEPA believes that the technical support submitted by the State and the Ford Motor Company adequately documents that an emission limitation of 4.5 lbs/gallon represents RACT for this vinyl coating plant. USEPA believes that the technical support demonstrates that the Ford vinyl coating plant in Mt. Clements, Michigan is outside the industry norm in capabilities and characteristics. Pursuant to USEPA guidance contained in the Administrator's February 24, 1978 memorandum, RACT determinations may be case by case provided that adequate documentation exists. Therefore, USEPA approves the emission limitation in Rule 336.1610 as representing RACT for this vinyl coating plant.

c. Rule 336.1610 contains plant by plant extended schedules for compliance with the RACT emission limits for automobile and light duty truck coating. USEPA indicated in the proposed rulemaking that it believed that the schedules provided for compliance as expeditiously as practicable. No public comments were received on this issue. Therefore, USEPA approves the extended schedules as part of the federally approved SIP.

Because the State has satisfactorily responded to USEPA's concerns on Rule 336.1610, USEPA approves the rule a part of the federally approved Michigan SIP.

4. Rule 336.1618 allows the use of cutback asphalt during the months of October through April. According to the CTG for this source category, cutback asphalt should be used only when ambient temperatures are less than 50 degrees Fahrenheit. Therefore, USEPA asked the State to demonstrate that temperature fluctuations occurring in the months of October and April necessitate the use of cutback asphalt.

State Response

In its October 12, 1979 response, the State of Michigan submitted information on temperature fluctuations in the months of April and October for three cities in Lower Michigan and one city in the Upper Peninsula. In addition, average normal temperatures were examined for other areas in the State during these months. Using this data, the State demonstrated that for significant portions of these two months temperatures are below 50 degrees Fahrenheit throughout the State.

USEPA Response

Based on the State's technical demonstration, USEPA believes the use of cutback asphalt is appropriate in Michigan during the period from October to April. Therefore, USEPA approves Rule 336.1618 as part of the federally approved Michigan SIP.

Carbon Monoxide

Two areas in the State of Michigan were designated as nonattainment for the carbon monoxide (CO) National Ambient Air Quality Standards. These areas are located in the City of Detroit and the County of Saginaw. In the August 13, 1979 Notice of Proposed Rulemaking (44 FR 47350, 47356) USEPA did not propose rulemaking on the control strategy for the City of Detroit nonattainment area. Proposed rulemaking on the CO control strategy for Detroit will appear in a supplemental notice of proposed rulemaking on the transportation plans, and on the requirement of inspection/maintenance.

In this notice USEPA is taking final action on the State's control strategy for the CO nonattainment area in Saginaw County. The State's control strategy for Saginaw County is based on the control of stationary source emissions from large ferrous cupolas and mobile source emission reductions which will be obtained through the Federal Motor Vehicle Program. Michigan submitted a new Rule (Rule 930, R. 336.1930) which provides for the control of emissions of carbon monoxide from ferrous cupola operations. USEPA's review of that rule noted that it did not provide for submittal of necessary increments of progress as required under Sections 110(a)(2)(B) and 172(b)(8) of the Clean Air Act. USEPA proposed to approve Rule 930 on the condition that the State provide specific assurances that detailed compliance schedules containing all the necessary increments of progress be submitted to USEPA as SIP revision, not later than six months after the effective date of the rule. No comments were received other than the

State's response to the deficiencies noted by USEPA.

State's Response

The State noted that the Rule requires subject sources to submit a program for compliance with the Rules within six months after the effective date of the rule. Section (4) of Rule 930 requires that sources submitting programs for compliance with Rule 930 include in their written programs dates by which equipment shall be ordered, date of commencement of construction, date of initial start-up of equipment and date final compliance will be achieved. Additionally, Michigan submitted a draft compliance order with detailed increments of progress and committed itself to submitting these schedules to USEPA.

USEPA Response

In USEPA's opinion this commitment resolves the noted deficiency.

Final Determination

USEPA approves Rule 930 (R. 336.1930) and the control strategy to attain the carbon monoxide NAAQS in Saginaw County.

Maintenance/Malfunction Provisions

USEAP, in its August 13, 1979 Notice of Proposed Rulemaking (44 FR 47350), stated that Michigan submitted Rules 911, and 912 (R 336.1911 and 1912) as its maintenance malfunction program. USEPA reviewed the Rules in that Notice and proposed to approve them as they were submitted. No comments were received regarding these Rules. The Rules require a source to prepare a malfunction abatement plan to detect, prevent, and correct malfunctions or equipment failures which would result in excess emissions. The Rules also specify what steps must be taken as a result of an abnormal condition or the breakdown of process or controlled equipment.

Final Determination

USEPA approves these Rules as submitted by the State. However, compliance with these requirements does not excuse violation of emission limitations.

New Source Review

As part of its Part D plan the State of Michigan submitted regulations which implemented a new source review program for nonattainment areas as well as regulations for the Prevention of Significant Deterioration (PSD) of attainment areas. This submittal included proposed Rules 101 through 285 (R 336.1101–1285). USEPA did not take any action on the PSD regulations in the August 13, 1979 Notice of Proposed Rulemaking. Later those regulations which pertained solely to PSD were withdrawn by the State. The numbers of the rules withdrawn are listed in the paragraph entitled "Prevention of Significant Deterioration".

In its August 13, 1979 Notice of Proposed Rulemaking (44 FR 47350), USEPA solicited comment on the State's proposed rules and noted several deficiencies therein. The only comment received on the new source review rules was from the State. The State's response to the deficiencies noted by USEPA are discussed below:

(1) The first deficiency pertained to USEPA's concern that the State's plan appeared to exempt carbon monoxide (CO) from the offset regulation and that the SIP did not demonstrate a margin for growth in those CO nonattainment areas where stationary sources contribute to ambient violations. Two areas of the State, in the City of Detroit and County of Saginaw, were listed as nonattainment for CO.

USEPA requested that the State correct the deficiency by submitting additional data for quantifying the growth margin provided for in the SIP or, in the alternative submit another SIP which does provide for a growth margin.

State Response

The State in its comments of October 12, 1979, responded by describing how the data submitted demonstrates the use of an accomodative approach for the reduction of CO. The State anticipates that its approach will result in a 100,000 ton per year margin of excess control for CO in the Detroit area by 1987 and a 60,000 ton per year margin for the Saginaw area in 1983.

USEPA Response

USEPA accepts Michigan's interpretation and use of the accomodative approach for the reduction of CO.

(2) The second deficiency cited by USEPA concerned a showing that issuance of permits would not interfere with reasonable further progress toward attainment as defined under Section 171 of the Act. USEPA stated that this deficiency could be corrected by State submitting a procedure for determining that reasonable further progress is being achieved.

State Response

The State in its comments pointed out that it has provided for reasonable further progress in the SIP because minor sources, in addition to major sources, are subject to the emission offset rules and because the offset requirement is greater than one for one.

USEPA Response

USEPA accepts Michigan's assessment that the SIP provides for reasonable further progress.

Final Determination

Rules 336.1101–1122, 1201, 1202, 1203(1), 1204, 1206–1236, 1239–1240(1) and (2)(a)(b)iv, (3), 1241, 1243, and 1280–1285 are approved as meeting the new source review requirements of Sections 110(a)(2)(I), 171, 172, and 173.

Part C—Prevention of Significant Deterioration

To meet the requirements of Section 110(a)(2)(D) and Part C of the Clean Air Act, Michigan had submitted proposed rules 203(2), 203(3), 205, and 231. In the August 13, 1979 Notice USEPA indicated that it would be taking action on these rules in a separate Federal Register Notice. On July 25, 1979 Michigan requested that the authority to implement the program for the prevention of significant deterioration (PSD) be delegated to them and withdrew the PSD rules from review by USEPA. The rules withdrawn from the April 25, 1979 submittal are as follows: 203(2), 203(3), 205, 231–237, and 242. In a letter dated September 10, 1979 USEPA granted Michigan authority to implement the PSD program. Notice of the delegation was given February 7, 1980 (45 FR 8299).

The 1978 edition of 40 CFR Part 52 lists in the subpart for each state the applicable deadlines for attaining ambient standards (attainment dates) required by Section 110(a)(2)(A) of the Act. For each nonattainment area where a revised plan provides attainment by the deadline required by Section 172(a) of the Act, the new deadlines will be substituted on the attainment date charts. The earlier attainment dates under Section 110(a)(2)(A) will be referenced in a footnote to the charts. Sources subject to plan requirements and deadlines established under Section 110(a)(2)(A) prior to the 1977 Amendments remain obligated to comply with those requirements, as well as with the new Section 172 plan requirements.

Congress established new deadlines under Section 172(a) to provide additional time for previously regulated sources to comply with new, more stringent requirements and to permit previously uncontrolled sources to comply with newly applicable emission limitations. If these new deadlines were permitted to supersede the deadlines established prior to 1977 Amendments,

sources that failed to comply with the pre-1977 plan requirements by the earlier deadlines would improperly receive more time to comply with those requirements. Congress, however, intended that the new deadlines apply to only new, additional control requirements and not to earlier requirements. As stated by Congressman Paul Rogers in discussing the 1977 Amendments:

> Section 110(a)(2) of the Act made clear that each source has to meet its emission limits "as expeditiously as practicable" but not later than three years after the approval of a plan. This provision was not changed by the 1977 Amendments. It would be a perversion of clear congressional intent to construe Part D to authorize relaxation or delay of emission limits for particular sources. The added time for attainment of the national ambient air quality standards was provided, if necessary, because of the need to tighten emission limits or bring previously uncontrolled sources under control. Delays or relaxation of emission limits were not generally authorized (123 Cong. Rec. H 11958, daily ed. November 1, 1977).

To implement fully Congress' intention that sources remain subject to pre-existing plan requirements, sources cannot be granted variances extending compliance dates beyond attainment dates established prior to the 1977 Amendments. Such variances would impermissibly relax existing requirements beyond the applicable Section 110(a)(2)(A) attainment date under the plan. Therefore, for requirements adopted before the 1977 Amendments, USEPA will not approve a compliance date extension beyond pre-existing 110(a)(2)(A) attainment dates, even though a Section 172 plan revision with a later attainment date has been approved.

However, in certain exceptional circumstances, extensions beyond a pre-existing attainment date are permitted. For example, if a Section 172 plan imposes new, more stringent control requirements that are incompatible with controls required to meet the pre-existing requirements, the pre-existing requirements and deadlines may be revised if a state makes a case-by-case demonstration that a relaxation or revocation is necessary. Any such exemption granted by a state will be reviewed and acted upon by USEPA as a SIP revision. In addition, as discussed in the April 4, 1979 Federal Register (44 FR 20373), an extension may be granted if it will not contribute to a violation of an ambient standard or a PSD increment.

Under Executive Order 12044, USEPA is required to judge whether a regulation is "significant" and therefore subject to the procedural requirements of the Order or whether it may follow other specialized development procedures. USEPA labels these other regulations "specialized". I have reviewed this regulation and determined that it is a specialized regulation not subject to the procedural requirements of Executive Order 12044.

This notice of final rulemaking is issued under the authority of Sections 110(a), 172 and 301(a) of the Clean Air Act, as amended (42 U.S.C. § 7410(a), 7502, 7601(a)).

Dated: April 23, 1980.

Douglas Costle,

Administrator.

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

Title 40 of the Code of Federal Regulations, Chapter 1, Part 52 is amended as follows:

1. Section 52.1170(c) is amended by adding paragraphs 16 to 20 to read as follows:

§ 52.1170 Identification of plan.

* * * * * *

(c) * * *

(16) On April 25, 1979, the State submitted its nonattainment area plan for areas designated nonattainment as of March 3, 1978 and as revised on October 5, 1978. This submittal contained Michigan's Part D attainment plans for particulate matter, carbon monoxide, sulfur dioxide, transportation, new source review, plus a copy of Michigan's existing and proposed regulations. USEPA is not taking action at this time to include in the federally approved SIP certain portions of the submittal: Michigan's sulfur dioxide control strategy for Ingham County; provisions in R 336.1310 concerning open burning; 336.1331, insofar as it may pertain to process sources in the iron and steel category and site specific revisions; 1349; 1350, 1351, 1352, 1353, 1354, 1355, 1356, and 1357 as they pertain to specific iron and steel source operations; Part 5, Extension of Sulfur Dioxide Compliance Date for Power Plants Past January 1, 1980; Part 7, Emission Limitations and Prohibitions—New Sources of Volatile Organic Compound Emissions, R 336.1701–1710 controlling minor sources of volatile organic compounds; Part 11, Continuous Emission Monitoring; Part 13, Air Pollution Episodes; Part 16, Organization and Procedures; and Part 17, Hearings. In addition USEPA is taking no action on the State's control strategy for the attainment of carbon monoxide in the City of Detroit; the transportation control plans, the requirement of vehicle inspection and maintenance, and general requirements which are not Part D requirements.

(17) On October 12, 1979, the State submitted comments and commitments in response to USEPA's notice of proposed rulemaking.

(18) On January 9, 1980, the State submitted a copy of the finally adopted rules of the commission. These rules became fully effective January 18, 1980. All of the rules submitted are approved except those identified in paragraph (16) on which no action has been taken at this time. (March 1980).

(19) On February 6, 1980, the State submitted the visible emission test method for stationary sources referenced in R 336.1303 as being on file with the Michigan Air Pollution Control Commission.

(20) On March 31, 1980, the State submitted revisions to the conditional approval schedules for total suspended particulates.

§ 52.1171 [Amended]

2. Section 52.1171 is amended by changing the heading "Photochemical Oxidants (hydrocarbons)" to "Ozone".

3. Section 52.1172 is revised to read as follows:

§ 52.1172 Approval status.

With the exceptions set forth in this subpart, the Administrator approves Michigan's plan for the attainment and maintenance of the National Ambient Air Quality Standards under section 110 of the Clean Air Act. Furthermore, the Administrator finds the plan satisfies all requirements of Part D, Title I of the Clean Air Act as amended in 1977, except as noted below. In addition, continued satisfaction of the requirements of Part D for the ozone portion of the SIP depends on the adoption and submittal of RACT requirements by July 1, 1980 for the sources covered by CTGs between January 1978 and January 1979 and adoption and submittal by each subsequent January of additional RACT requirements for sources covered by CTGs issued by the previous January.

4. Section 52.1173 is revised as follows:

§ 52.1173 Control strategy: particulates.

(a) Part D—Conditional Approval—The Michigan plan for primary and secondary nonattainment areas which do not include iron and steel sources is approved provided that the following condition is satisfied:

(1) The State officially adopts final industrial fugitive regulations that represent RACT for traditional sources and submits these finally effective regulations to USEPA.

(b) Part D—No Action—USEPA takes no action on the adequacy of rules submitted by Michigan to control particulate emissions from the iron and steel making industries. Therefore, USEPA takes no action on the control strategy for particulates in those areas which are designated nonattainment for particulates and which contain iron and steel sources.

5. Section 52.1174 is revised as follows:

§ 52.1174 Control strategy: ozone.

(a) Part D—Conditional Approval—Michigan Rules 336.1603 and 336.1606 are approved provided that the following conditions are satisfied.

(1) Rule 336.1603—The State submits detailed compliance schedules containing increments of progress by March 31, 1981 for sources with final compliance dates prior to December 31, 1982 and by September 31, 1981 for sources with final compliance dates beyond December 31, 1982.

(2) Rule 336.1606—The State either promulgates a rule with a 120,000 gallon per year throughput exemption for gasoline dispensing facilities and submits it to USEPA or demonstrates that allowable emissions resulting from the application of its existing rule with 250,000 gallon per year throughput exemption for gasoline dispensing facilities are less than five percent greater than the allowable emissions resulting from the application of the CTG presumptive norm.

§ 52.1176 [Amended]

6. Sections 52.1176(c), (d), and (e) are hereby revoked pursuant to section 110(a)(5)(A) of the Clean Air Act (42 U.S.C. 7410) and reserved.

7. Section 52.1177 is revised as follows:

§ 52.1177 Attainment dates for national standards.

The following table presents the latest dates by which the national standards are to be attained. The dates reflect information presented in Michigan's plan, except where noted.

[06]0026

Air quality control region and nonattainment area	Pollutant						
	TSP		SO_2		NO_2	CO	O_3
	Primary	Secondary	Primary	Secondary			
South Bend-Elkhart-Benton Harbor Interstate (AQCR 82):							
a. Primary and Secondary Nonattainment Areas.	c	f	c	c	c	c	d
b. Remainder of AQCR	c	c	c	c	c	c	d
Central Michigan Intrastate (AQCR 122):							
a. Primary and Secondary	d	c	d	c	c	d	d
b. Remainder of AQCR	c	f	c	c	c	c	b
Metropolitan Detroit-Port Huron Intrastate (AQCR 123):							
a. Primary and Secondary	d	f	c	c	c	d	d
b. Remainder of AQCR	c	c	c	c	c	c	c
Metropolitan Toledo Interstate (AQCR 124):							
a. Primary and Secondary	c	f	c	c	c	c	d
b. Remainder of AQCR	c	c	c	c	c	c	c
South Central Michigan Intrastate (AQCR 125):							
a. Primary and Secondary	d	f	d	c	c	c	d
b. Remainder of AQCR	c	c	c	c	c	c	c
Upper Michigan Intrastate (AQCR 126):							
a. Primary and Secondary	c	f	c	c	c	c	d
b. Remainder of AQCR	c	c	c	c	c	c	b

NOTE.—Dates or footnotes which are italicized are prescribed by the Administrator because the plan did not provide a specific date or the date provided was not acceptable. These dates may be changed through revisions to the SIP by the State.

NOTE.—Sources subject to the plan requirements and attainment dates established under section 110(a)(2)(A) prior to the 1977 Clean Air Act Amendments remain obligated to comply with these requirements by the earlier deadlines. The earlier attainment dates are set out at 40 CFR § 52.727.

NOTE.—For actual nonattainment designations, refer to 40 CFR Part 81.

a. July 1975.
b. Air quality levels presently below primary standards or area is unclassified.
c. Air quality levels presently below secondary standards or area is unclassified.
d. December 31, 1982.
e. December 31, 1987.
f. July 31, 1985.

[FR Doc. 80-13894 Filed 5-5-80; 8:45 am]

BILLING CODE 6560-01-M

40 CFR Part 180

[FRL 1485-5; OPP-300007B]

Tolerances and Exemptions From Tolerances for Pesticide Chemicals in or on Raw Agricultural Commodities; Inert Ingredient; Correction

AGENCY: Environmental Protection Agency (EPA).

ACTION: Correction.

SUMMARY: This notice reinstates in the Code of Federal Regulations (CFR) an inert ingredient that was inadvertently dropped out of the CFR.

EFFECTIVE DATE: May 6, 1980.

FOR FURTHER INFORMATION CONTACT: Mr. John Shaughnessy, Registration Division (TS-767), Office of Pesticide Programs, Environmental Protection Agency, 401 M St. SW, Washington, DC 20460, 202/426-9425.

SUPPLEMENTARY INFORMATION: In FR Doc. 75-32972 appearing at page 57215, in the issue of Monday, December 8, 1975, an exemption from the requirement of a tolerance was established in § 180.1001(d) for residues of the inert ingredient alpha-alkyl(C_{12}-C_{16})-*omega*-hydroxypoly(oxyethylene/oxypropylene) heteric polymer in which the oxyethylene content averages 13–17 moles and the oxypropylene content averages 2–6 moles. The inert ingredient was subsequently published in the 1976 edition of the CFR but inadvertently was not printed in the 1977 and all subsequent CFR editions. This omission is being corrected by reinstating the dropped inert ingredient in alphabetical order in § 180.1001(d) to read as follows:

§ 180.1001 Exemptions from the requirement of a tolerance.

* * * * *

(d) * * *

Inert ingredients	Limits	Uses
* * * * *		
alpha-Alkyl(C_{12}-C_{16})-*omega*-hydroxypoly(oxyethylene/oxypropylene) heteric polymer in which the oxyethylene content averages 13–17 moles and the oxypropylene content averages 2–6 moles.		Surfactants, related adjuvants of surfactants.
* * * * *		

Dated: April 30, 1980.

Edwin L. Johnson,

Deputy Assistant Administrator for Pesticide Programs.

[FR Doc. 80-13892 Filed 5-5-80; 8:45 am]

BILLING CODE 6560-01-M

IMPLEMENTATION PLAN
FOR THE CONTROL OF SUSPENDED PARTICULATES, SULFUR OXIDES, CARBON MONOXIDE, HYDROCARBONS, NITROGEN OXIDES, AND PHOTOCHEMICAL OXIDANTS IN THE STATE OF MICHIGAN

JANUARY 1972

Process weight—The total amount of all material introduced into an industrial operation, including solid fuels, but excluding liquid fuels and gaseous fuels when these are used as fuels and air introduced for purposes of combustion.

Process weight rate—For continuous or long-term operation: The total process weight for the entire period of operation or for a typical portion thereof, divided by the number of hours of such period or portion thereof. For batch operations: The total process weight for a period which covers a complete operation or an integral number of cycles, divided by the hours of actual process operation during such period.

History: 1954 ACS 51, p. 26, Eff. Aug. 15, 1967; 1954 ACS 77, p. 77, Eff. Dec. 1, 1973.

R 336.45 Open burning.

Rule 45. (1) A person shall not cause or permit open burning except burning of:

(a) Waste disposal of material from and at 1- or 2-family dwellings where the burning does not violate any other of the commission's rules.

(b) Structures and other materials used exclusively for fire prevention training if prior approval is obtained from the commission.

(c) Trees, logs, brush, and stumps in accordance with applicable state and local regulations if the burning is not conducted closer than 1,400 feet to an incorporated city or village limit and if the burning does not violate any other of the commission's rules.

(2) These exceptions do not authorize burning where prohibited by local law or regulation.

History: 1954 ACS 51, p. 26, Eff. Aug. 15, 1967; 1954 ACS 77, p. 79, Eff. Dec. 1, 1973.

R 336.46 Air contaminant or water vapor; when prohibited.

Rule 46. A person shall not cause or permit the emission of an air contaminant or water vapor, including an air contaminant whose emission is not otherwise prohibited by these rules, or an air contaminant or water vapor which reacts or may react with any other air contaminant or natural air, and which causes or will cause detriment to the safety, health, welfare, or comfort of any person, or which causes or will cause damage to property or business.

History: 1954 ACS 51, p. 26, Eff. Aug. 15, 1967; 1954 ACS 77, p. 79, Eff. Dec. 1, 1973.

R 336.47 Diluting and concealing emissions.

Rule 47. Unless prior written approval is obtained from the commission, no person shall build, erect, install, or use any article, machine, equipment, or other contrivance, the sole purpose of which is to dilute or conceal an emission without resulting in a reduction in the total release of air contaminants to the atmosphere. This rule does not apply to the control of odors.

History: 1954 ACS 51, p. 26, Eff. Aug. 15, 1967.

R 336.48 Abnormal conditions and breakdown of equipment.

Rule 48. Emissions exceeding any of the limits established in rules as a direct result of abnormal conditions in or breakdown of a process, fuel-burning, refuse-burning, control or related operating equipment beyond the control of the person owning or operating such equipment shall not be deemed to be in violation of such rules, if the owner or operator advises the commission of the circumstances and outlines a corrective program acceptable to the commission.

History: 1954 ACS 51, p. 26, Eff. Aug. 15, 1967.

R 336.49 Emission of sulfur dioxide from power plants.

Rule 49. (1) It is unlawful for a person to burn in a power plant fuel which does not comply with either the sulfur content limitation of table 3, or which when

Title 40—PROTECTION OF ENVIRONMENT

Chapter I—Environmental Protection Agency

SUBCHAPTER C—AIR PROGRAMS

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

On April 30, 1971 (36 F.R. 8186), pursuant to section 109 of the Clean Air Act, as amended, the Administrator promulgated national ambient air quality standards for sulfur oxides, particulate matter, carbon monoxide, photochemical oxidants, hydrocarbons, and nitrogen dioxide. Within 9 months thereafter, each State was required by section 110 of the Act to adopt and submit to the Administrator a plan which provides for the implementation, maintenance, and enforcement of national ambient air quality standards within each air quality control region in the State. An additional period of no longer than 18 months may be allowed for adoption and submittal of that portion of a plan relating to implementation of secondary ambient air quality standards. State plans must provide for attainment of national primary ambient air quality standards within 3 years after the date of the Administrator's approval of such plans, except that a 2-year extension of this deadline may be granted by the Administrator. State plans must provide for attainment of national secondary ambient air quality standards within a reasonable time. Within 4 months from the date on which State plans were required to be submitted, the Administrator must approve or disapprove such plans or portions thereof.

On August 14, 1971 (36 F.R. 15486), the Administrator promulgated regulations (40 CFR Part 51) (formerly 42 CFR Part 420, but transferred to Chapter I of Title 40 by publication in the FEDERAL REGISTER, page 22369 et seq., November 25, 1971) setting forth requirements for preparation, adoption, and submittal of State implementation plans. These regulations were amended October 23, 1971 (36 F.R. 20513), and December 30, 1971 (36 F.R. 25233), to make certain additions and corrections. The Administrator's regulations (40 CFR Part 51) provided generally that State plans must set forth a control strategy for attainment and maintenance of the national standards; legally enforceable regulations and compliance schedules for implementation of the control strategy; a contingency plan for preventing the occurrence of air pollution levels which would cause significant harm to the health of persons; source surveillance procedures; procedures to assure that construction or modification of stationary sources will not interfere with attainment or maintenance of the national standards; provisions for air quality surveillance; a description of the resources needed to carry out the State plan; and provisions for intergovernmental cooperation. Some of the requirements vary by air quality control region in accordance with a classification scheme set forth in 40 CFR 51.3. Each State plan must also show that the State has the legal authority necessary to carry out the plan, as specified by 40 CFR 51.11. States were required to conduct one or more public hearings prior to adoption of their implementation plans.

All 50 States, plus the District of Columbia, Puerto Rico, Virgin Islands, Guam, and American Samoa have submitted implementation plans. The Administrator's approvals and disapprovals are set forth below. A more detailed description of disapproved portions, together with an explanation of the basis of disapproval, will be provided to the States; copies of these Evaluation Reports will be available for public inspection at the Environmental Protection Agency, 401 M Street SW., Washington, D.C., and in the Agency's Regional Offices.

Where the Administrator disapproves a State plan or portion thereof, or where a State fails to submit an implementation plan or portion thereof, the Administrator is required, under section 110(c) of the Act, to propose and subsequently promulgate regulations setting forth a substitute implementation plan or portion thereof. Where regulatory portions of a State plan, including control strategies and related rules and regulations, are disapproved or were not submitted, regulations setting forth substitute portions will be proposed and promulgated. When disapproved portions are of a nonregulatory nature, e.g., air quality surveillance, resources, intergovernmental cooperation, and therefore are not susceptible to correction through promulgation of regulations by the Administrator, detailed comments will be included in the evaluation report; in such cases, the Environmental Protection Agency will work with the States to correct the deficiencies.

To the extent possible, the Administrator's evaluation of State plans reflects the latest information submitted by the States. In the interest of giving States every opportunity to bring their implementation plans into full compliance with the Act and 40 CFR Part 51, the Environmental Protection Agency has notified States that modifications submitted after the statutory deadline for submittal of State plans would be accepted and considered: *Provided*, That such modifications were made and submitted in accordance with the requirements of 40 CFR Part 51. Accordingly, many States have been, and still are, making and submitting modifications of their implementation plans. Where such modifications affect the Administrator's approval or disapproval of a State plan or portion thereof, but are not reflected herein, appropriate changes to this part will be published as soon as the Administrator's evaluation of such modifications is completed.

The Act directs the Administrator to require a State to revise its implementation plan whenever he finds that it is substantially inadequate for attainment and maintenance of a national standard. In accordance with the statutory mandate, the Environmental Protection Agency will make a continuing evaluation of the State plans and will, as necessary, call upon the States to make revisions.

EVALUATION OF LEGAL AUTHORITY

States were required to have the legal authority specified in the Administrator's regulations. With one exception, States were required to have the specified legal authority available to them at the time they submitted their implementation plans. The one exception is authority to carry out land-use and transportation control measures; where a State's control strategy includes such measures, the State plan must set forth a timetable for obtaining the necessary legal authority. Where it was determined that a State's air pollution control statute does not explicitly provide all of the required legal authority, the State's attorney general was consulted for an opinion as to whether the necessary authority is conferred by a general grant of powers in the air pollution control statute or provided in other statutes. Where a State plan indicated that one or more local agencies will be responsible for carrying out any portion of the implementation plan, a similar assessment was made of the legal authority available to such local agencies. A complete record of the Environmental Protection Agency's assessment of legal authority is maintained in the Office of the Associate General Counsel, Air Quality and Radiation Division, Rockville, Md. 20852.

DELEGATION OF LEGAL AUTHORITY

The legal authority which each State was required to have carry out its implementation plan is specified by 40 CFR 51.11. Subparagraphs (5) and (6) of § 51.11(a) require each State to have the authority to obtain information to determine compliance with applicable laws and regulations; require recordkeeping; make inspections; conduct tests; require sources to install and maintain monitoring equipment; require periodic reporting; and release emission data to the public. The Administrator has such authority under section 114 of the Act and can delegate it to States. Where a State lacks the authority required by 40 CFR 51.11(a) (5) or (6), that portion of its implementation plan is disapproved herein; however, if the State has requested delegation of the Administrator's authority, and if the State's source surveillance procedures are approvable, the needed authority is delegated herein. Where a State lacks the authority required by 40 CFR 51.11(a) (5) or (6) but has not requested delegation of authority, the Administrator cannot approve source surveillance procedures even though the procedures may be technically adequate. The State can correct this deficiency by requesting a delegation of authority; such requests may be made at any time and should be addressed to the appropriate Regional Administrator.

ATTAINMENT OF PRIMARY STANDARDS

The Act requires attainment of primary standards as expeditiously as practicable, but not later than 3 years from the date of the Administrator's approval of a State plan except where an extension is granted by the Administrator; it requires attainment of secondary standards within a reasonable time. Except where extensions have been requested, State plans generally provide for attainment of the primary standards in 3 years. Whether more expeditious attainment of the primary standards is practicable is a question that will be subject to continuing examination in connection with the Administrator's review of the compliance schedules and progress reports to be submitted by the States and as part of the Administrator's continuing surveillance of State activities. It is already clear, however, that the aggregate emission control requirements of the 55 State plans will create such a great demand for clean fuels, emission control equipment, and other items that attainment of the primary standards in many urban areas in significantly less time than 3 years generally will not be feasible.

ATTAINMENT DATES

Each State plan must specify the projected dates of attainment of primary and secondary standards. Where a State plan sets forth a control strategy and regulations adequate for attainment of the national standards within the time periods prescribed by the Act but fails to specify an attainment date, the Administrator will promulgate attainment dates meeting the requirements of the Act.

MAINTENANCE OF STANDARDS

Where existing air pollution levels exceed the national standards, State plans were expected to provide for the degree of emission reduction necessary for attainment and maintenance of the national standards, including the degree of emission reduction necessary to offset the probable impact of projected growth of population, industrial activity, motor vehicle traffic, or other factors. There is a great deal of uncertainty involved in projecting growth and predicting its impact on air quality. Growth projections extending more than 2 or 3 years into the future are necessarily generalized and inevitably are based on a variety of assumptions, many of them which are, at best, tenuous. Even where growth policies have been adopted by State or local governments, they normally provide only general guidelines. Techniques for translating generalized projections of population and industrial growth into predictions of future air quality do not exist. Accordingly, States were limited in the extent to which they could develop control strategies adequate not only for attainment, but also for maintenance, of the national standards. Since the Environmental Protection Agency's capability of planning for continued maintenance of the national standards is subject to the same limitations, and since State and local governments clearly should not lightly be deprived of the opportunity to plan and control growth in a manner best suited to the needs and preferences of individual communities and their inhabitants, with due consideration of environmental impacts, the Administrator, at this time, is not proposing substitute control strategies based on considerations related solely to maintenance of national standards. States are required, however, to prevent construction, modification, or operation of any stationary source at any location where its emissions will prevent the attainment or maintenance of a national standard; the Administrator will promulgate appropriate regulations wherever State plans are judged inadequate in this regard. Thus, all State plans will include this mechanism for minimizing the effects of growth on air quality. New source performance standards promulgated by the Administrator under section 111 of the Act will also serve to minimize the impact of growth. Furthermore, the Act authorizes the Administrator to require revision of a State plan whenever he finds that it is substantially inadequate to attain or maintain a national standard. It is the Administrator's intention to make a continuing examination of the adequacy of State plans, and, where necessary, to call for revisions. States should be aware that failure to provide for maintenance of the national standards could necessitate restraints on population and industrial growth and/or further restrictions on emissions from existing sources of air pollution.

EVALUATION OF CONTROL STRATEGIES

A "control strategy" is a combination of measures designed to achieve the aggregate reduction of emissions necessary for the purposes of attainment and maintenance of a national standard. The Administrator's regulations (40 CFR 51.13 and 51.14) set forth procedures, i.e., proportional or diffusion modeling, to be employed by the States in demonstrating that their control strategies will be adequate for these purposes. Evaluation of the control strategies generally included assessment of the accuracy of the data relied upon by a State in demonstrating the adequacy of control strategies, the validity of any assumptions made by the State, and the accuracy of the calculations employed in the modeling exercises. In addition, a determination was made as to whether the control strategy would be sufficiently comprehensive.

SULFUR OXIDES AND PARTICULATE MATTER

The national standards for sulfur oxides and particulate matter include both short-term standards, e.g., maximum 24-hour concentrations not to be exceeded more than once per year, and long-term standards, i.e., annual average concentrations. State plans were required to set forth control strategies adequate for attainment and maintenance of both the short-term and long-term standards, with the exception of the 24-hour secondary standard for sulfur oxides and the annual average secondary standard for particulate matter, both of which are guidelines. Where State plans did not explicitly demonstrate that a control strategy is adequate for attainment and maintenance of short-term, as well as long-term standards, the Administrator has made judgments based on available data regard peak-to-mean ratios; point-source control measures, for example, are likely to reduce the frequency and intensity of peak concentrations, thus altering peak-to-mean ratios and increasing the likelihood that a control strategy adequate for attainment of an annual average standard will also be adequate for attainment of short-term standards.

FUEL AVAILABILITY

The State implementation plans to control SO_x generally have been responsive to the mandates of the Clean Air Act. The plans provide for meeting by 1975 primary air quality standards which are designed to protect the public health. In most cases, the States determined 1975 to be the "reasonable time" allowed by the Act to meet the secondary air quality standards for SO_x which are designed to protect the public welfare. Fuel combustion regulations were designed to achieve both the primary and secondary standards by the 1975 date. In most States these emission regulations were made to apply statewide, without regard to the differing air quality in regions within the State.

It is clear that achieving these rigorous State standards in the time prescribed would significantly enhance air quality in many areas of the Nation, as contemplated by the Clean Air Act. However, in addition to reviewing the effectiveness of each State implementation plan, this Agency and the Federal Government have an obligation to assess the impact of the various plans in the aggregate. From this standpoint, there is strong evidence that the complete implementation of the plans as submitted may not be attainable in the time prescribed.

Because of physical limitations on our ability to clean the emissions of high sulfur fuels on a large scale in the time permitted by the statute, achievement of the particulars of the State plans would require the availability of large additional supplies of "clean" fuels—natural gas and low sulfur coal and oil. Since fuel desulfurization facilities are unlikely to be built on the scale which would be required to fully implement all State plans by 1975, it appears that all State plans can be completely implemented by 1975 only with a major short term shift to naturally clean fuels. Unfortunately, these naturally clean fuels are not likely to be available in quantities necessary to meet the projected demand.

Unfortunately, our long-overdue concern for air quality comes at a time when the abundance of cleaner energy fuels in the United States is rapidly disappearing and energy experts are becoming worried about our ability to meet our energy fuel needs even independent of environmental considerations. Given the limits on the supply of naturally clean fuels in the short run, the well publicized shortage of natural gas in this country, and the physically disruptive task of substituting

the use of huge amounts of clean fuels by energy producers and users at a time when traditional fuels such as natural gas are in short supply, it is apparent that the Nation faces a difficult task.

It is also apparent that the cost of this effort, translated into costs of fuel and electric energy to our economy and to individual energy consumers, will be substantial and cannot be wholly ignored. On the other hand, appropriate enviromental costs must be recognized in the price of energy if we are to allocate our total resources properly.

There are alternative strategies which should permit achievement of the goals of the Clean Air Act within the legislative deadlines, but the approach must be twofold. First, implementation of the standards must take into account the limits on total availability of clean fuels. Second, government must also address the problem of creating economic and other incentives which ensure that natural or desulfurized clean fuels go to users in areas of greatest environmental need.

The Pure Air Act of 1972 (the sulfur emission tax), which is currently before Congress, is important to both aspects of this approach. The tax would permit clean fuels to reach users in areas of environmental need by providing a strong economic incentive for those users to bid for the clean fuels. The tax would also increase the availability of clean fuels by providing an economic stimulus both to develop new clean fuel resources, and to perfect technology for cleaning fuels before combustion, and for purifying exhaust gases.

Preliminary analysis by EPA indicates the real possibility that, under current conditions in the domestic and world fuel markets including the absence of the sulfur tax, all aspects of the State Plans in the aggregate cannot be achieved by 1975 despite the best efforts of both government and the private sector. Pending further study, EPA is approving or promulgating regulations for meeting both the primary and secondary SO_x standards. The States should proceed to develop compliance schedules on the assumption that both standards can be met. In the meantime EPA will be completing its studies of the aggregate situation and will suggest necessary changes to the States, and likewise modify federally promulgated SO_x regulations for achievement of the secondary standard where appropriate. Highest priority must be given to achieving the primary standards (health related) by the statutory deadline.

At this time, the States most likely to be affected by this shortage of clean fuels include Illinois, Indiana, Kentucky, Wisconsin, Michigan, Ohio, Tennessee, Alabama, Pennsylvania, West Virginia, Georgia, and New York, but others will also need to consider the availability of fuels in developing compliance schedules.

For its part in addition to completing this work, EPA intends to be vigorous in urging other Federal agencies and the Congress to adopt energy policies which will stimulate the availability of needed clean fuels and insure their availability to areas of greatest need, consistent with environment, national security, consumer and other considerations.

Nitrogen Dioxide

Where attainment of the national standard for nitrogen dioxide would require additional emission reductions beyond those expected to result from Federal motor vechicle emission standards, the Admistrator's regulations (40 CFR 51.14) required States to provide for the degree of nitrogen oxides emission reduction attainable through the application of reasonably available technology for the control of stationary source emissions of nitrogen oxides, as defined by 40 CFR Part 51, Appendix B. Hydrocarbon emission reductions arising from the Federal motor vehicle standards or from transportation control measures undertaken to implement the national standards for photochemical oxidants will tend to reduce ambient air concentrations of nitrogen dioxide. In accordance with 40 CFR 51.14, this combination of stationary and mobile source control measures is considered an adequate control strategy for implementation of the national standards for nitrogen dioxide. Studies aimed at providing an improved basis for developing and evaluating nitrogen oxides control strategies are underway. Based on the results of these studies, the Administrator will determine whether revision of the State plans for implementation of the national standards for nitrogen dioxide will be necessary; such revisions may necessitate, among other things, the development and application of nitrogen oxides emission control techniques going beyond those which are now available. Pending such action, States' requests for 2-year extensions of the deadline for attainment of this national standard have not been evaluated.

Hydrocarbons

The national standard for hydrocarbons (40 CFR 50.10) is a guide to the formulation of control strategies for attainment and maintenance of the national standard for photochemical oxidants. Accordingly, State plans were not required to provide for attainment and maintenance of the national standard for hydrocarbons, per se.

Transportation Control Measures

The Act and the Administrator's regulations (40 CFR Part 51) require States to take steps to reduce emissions from transportation sources wherever such steps are necessary for attainment and maintenance of national ambient air quality standards. In August 1971, when the Administrator's regulations were promulgated, it was recognized that States have had practically no experience with transportation control measures as a means of dealing with air quality problems and that available data were not sufficient to permit States to develop meaningful transportation control schemes and predict their impact on air quality. The Environmental Protection Agency had already begun an assessment of the extent to which various transportation control measures, including motor vehicle inspection and installation of emission control devices on in-use automobiles, could be expected to produce improvements in air quality, but it was apparent that the results would not be available within the time allowed for development of State plans. Accordingly, the States were advised that adoption of transportation control schemes could be deferred beyond the statutory deadline for submittal of implementation plans but that State plans would have to define the degree of emission reduction to be achieved through transportation control measures and identify the measures being considered. States were further advised that they would have to submit, no later than February 15, 1973, together with their first semiannual progress reports, definitive transportation control plans, including identification of the specific measures to be implemented, demonstration of the adequacy of these measures for attainment and maintenance of the national standards, and a detailed timetable for obtaining any necessary legal authority and taking all other steps necessary to implement the various measures. The Environmental Protection Agency, in cooperation with the Department of Transportation, will provide assistance to the States in the development of their transportation control plans.

Compliance Schedules

State plans were required to specify the dates by which all sources must be in compliance with applicable regulations, except that, where a State plan provides for negotiating compliance schedules for individual sources, such schedules are required to be submitted to the Administrator no later than the time of submittal of the State's first semiannual progress report. States generally have either prescribed a terminal date for compliance by all sources, with individual source schedules, including schedules of incremental steps toward compliance, to be negotiated, or have made regulations effective almost immediately, with compliance schedules to be negotiated and effectuated through a variance procedure. Either approach is considered acceptable: *Provided, first*, That compliance with all regulations related to attainment of national ambient air quality standards will be achieved by the attainment date specified in the State plan or prescribed by the Administrator, and second, that provision is made for negotiating compliance schedules, including incremental steps in cases where the terminal date is more than 18 months away.

Emergency Episodes

State plans were required to set forth episode criteria, i.e., pollutant concentrations at which specified emission control actions will be initiated in order to prevent significant harm to the health of persons. Episode criteria were required to be adequate to protect against occurrence of the significant harm levels prescribed by the Administrator (40 CFR 51.16). Emission control action plans were required to provide for abate-

ment action dealing with area sources, e.g., open burning, commercial and residential incinerators, and motor vehicles, and to provide for development of individual standby abatement plans for all stationary sources emitting 100 tons per year or more. Where episode criteria and/or emission control action plans applicable to area sources and motor vehicles were not submitted or were disapproved, the Administrator is not prescribing substitute provisions, but, rather, in carrying out his responsibilities under section 303 of the Act, will be guided by the suggested episode criteria and emission control action plans set forth in the Administrator's regulations (40 CFR Part 51, Appendix L). Where episode criteria and/or emission control action plans are approved, the Administrator will make use of them in the event that it is necessary to initiate action under section 303. In either case, the Administrator, in acting under section 303, may also take into consideration other relevant information and advice, including medical-scientific opinions on endangerment to the health of persons. Where a State plan fails to provide for public announcements of episode stages or fails to provide for development of standby abatement plans for stationary sources emitting 100 tons per year or more, the Administrator will promulgate regulations to correct such deficiencies.

Air Quality Surveillance

Where a State's provisions for air quality surveillance do not meet the requirements of the Administrator's regulations (40 CFR 51.17), the deficiencies will be identified in the evaluation report, and the Environmental Protection Agency will work with the State in correcting the deficiencies. Insofar as air quality monitoring methods are concerned, the only methods currently approved are the reference methods prescribed by the Administrator (40 CFR Part 50) simultaneously with a promulgation of the national standards. With respect to carbon monoxide, photochemical oxidants, and hydrocarbons, the Administrator prescribed an analytical principle; any method employing exactly the same analytical principle is considered a reference method, provided that it meets the performance specifications set forth in the Administrator's regulations (40 CFR 51.17). For all pollutants, methods other than the reference methods prescribed by the Administrator may be approved if they are shown to be equivalent to the reference methods. Equivalency testing guidelines are being developed by the Environmental Protection Agency.

New Sources and Modifications

State plans were required to provide for review of new sources and modifications of existing sources and for preventing construction or modification if it would result in violations of applicable portions of a control strategy or interfere with attainment or maintenance of national standards.

Resources

States were required by section 110 of the Act to provide assurances that they will have adequate resources, i.e., personnel and funding, to carry out their implementation plans. The Administrator's judgment as to the probable adequacy of projected resources is based on a number of considerations, including estimates of manpower needs in relation to factors affecting the nature and magnitude of air pollution problems and previous evaluations of the performance of State and local air pollution control agencies. Where it is the Administrator's judgment that a State's projected resources may be inadequate, the Environmental Protection Agency will work with the State in correcting this deficiency. The Administrator's judgment on the adequacy of resources should not be construed as a commitment to provide financial support; such support is subject to the limitations of funds appropriated under the Clean Air Act.

Two-Year Extensions

The Act provides for 2-year, or shorter, extensions of the statutory deadline for attainment of national primary ambient air quality standards where needed technology or other alternatives are not available or will not be available soon enough to permit attainment of the primary standards within the 3-year period prescribed by the Act. For the most part, States' requests for such extensions were related to identified needs for application of transportation control measures. The Administrator has determined that the leadtime necessary for development, adoption, and implementation of transportation control measures generally precludes their application on any significant scale within the next 3 years, i.e., they will not be available soon enough to permit attainment of the primary standards within the time period prescribed by the Act. This determination was reflected in 40 CFR 51, in which emission control measures applicable to mobile sources, with minor exceptions, were not included among the various emission control measures judged to be attainable with reasonably available technology. Accordingly, it is the Administrator's judgment that 2-year extensions are justified in cases where transportation control measures will be necessary. It should be emphasized, however, that timetables for attainment of primary standards will be subject to continuing examination, and, where the Administrator finds that more expeditious attainment is practicable, States will be required to revise their timetables.

Where States have submitted implementation plans that do not provide for attainment of the primary standards within the 3-year period prescribed by the Act and have not requested an extension, the Administrator has evaluated such State plans to determine whether an extension is justified under the provisions of the Act. The Administrator's determinations in such cases are reflected below; these determinations will also be subject to continuing examination, and where necessary, revision.

Eighteen-Month Extensions

Under the Act, the Administrator may, wherever he determines necessary, extend for a period of not more than 18 months the deadline for submittal of a State plan or portion thereof which would implement a national secondary standard. 40 CFR 51.31 provides that such extensions may be granted where attainment of a secondary standard will require emission reductions exceeding those which can be achieved through the application of reasonably available control technology, as defined in 40 CFR Part 51, Appendix B. Where a State plan fails to provide for attainment of a secondary standard, and where attainment would require emission reductions exceeding those which can be achieved through the application of reasonably available control technology, the Administrator is providing for an 18-month extension regardless of whether the State has requested one. Such extensions will be applicable to adoption of an adequate plan for implementation of the secondary standard by the State or promulgation of an adequate implementation plan by the Administrator.

Emission Data Availability

The Act requires assurance that States will provide for public availability of emission data. Where a State lacks legal authority to obtain and/or release emission data or where the State plan is deficient with respect to source-reporting requirements or procedures for public access to emission data, the Administrator is disapproving the pertinent provisions of the State plan. The Administrator will promulgate regulations to remedy such deficiencies. Under section 114 of the Clean Air Act, States may request delegation of the Administrator's authority to obtain and release information.

Source Monitoring

States must have legal authority to require stationary source owners or operators to install, maintain, and use emission monitoring devices. The Environmental Protection Agency is making an analysis of the performance of currently available emission (in-stack) monitoring devices. Accordingly, States were not required by 40 CFR Part 51 to impose specific source-by-source requirements for in-stack monitoring at this time.

Optional Control

Several State plans include regulations under which a source owner or operator could be exempt from compliance with an applicable emission limitation if he can show that emissions from the source will not interfere with attainment or maintenance of the national standards. The Administrator neither approves nor disapproves such optional control features. States are advised, however, that action taken to allow any such exemptions will constitute revision of a State plan and

therefore will be subject at that time to the Administrator's approval.

REVISIONS

In accordance with the Act and the Administrator's regulations (40 CFR 51.6), all State plans are subject to revision, as necessary, to take account of revisions of the national standards, availability of improved or more expeditious methods of attaining the national standards, or a finding by the Administrator that a State plan is substantially inadequate to attain or maintain a national standard. Accordingly, whether a State has acknowledged that its implementation plan is subject to revision is considered immaterial.

ENFORCEMENT

Upon approval by the Administrator, a State plan is enforceable by the Administrator under the Clean Air Act. All approved provisions relating to attainment and maintenance of national standards, including approved rules and regulations, are subject to such enforcement action. Where a State plan includes regulations designed to attain and maintain air quality better than that required by the national standards, such regulations are subject to enforcement action under the Clean Air Act unless they are separate from those necessary for attainment and maintenance of the national standards.

PROGRESS REPORTS

States are required to submit semi-annual reports on their progress in carrying out approved implementation plans or portions thereof. For implementation plans approved herein, the first progress reports will be due February 15, 1973. A format for use in preparing and submitting such reports is being prepared and will be made available to the States.

PREVIOUS APPROVALS

The State implementation plans approved herein supplement the portions previously approved by the Administrator, notice of which was published February 3, 1972 (37 F.R. 2581), at Part 52 of Title 40 of the Code of Federal Regulations. Portions of State plans which have previously been approved remain in effect and unaffected by the approvals published today.

SCOPE OF APPROVALS

In general, all portions of State plans which are related to attainment and and maintenance of national standards are approved unless specifically disapproved herein.

JUDICIAL REVIEW

The Administrator's approval or promulgation of implementation plans, or portions thereof, is subject to judicial review under section 307(b)(1) of the Clean Air Act. For purposes of section 307(b)(1), the 30-day period within which a petition for review may be filed will be considered to run from the date of publication in the FEDERAL REGISTER of a notice of approval or promulgation of a plan or portion thereof.

NOTE

Subpart A of the regulations includes general statements regarding the type of provisions which will be promulgated by the Agency as necessary in various subparts. These statements are expressed in the present tense in order to avoid revisions of verb tenses at the time of promulgation.

EFFECTIVE DATE

These regulations are effective on the date of their publication in the FEDERAL REGISTER (5-31-72). The Agency finds that good cause exists for not publishing these regulations as a notice of proposed rule making and for making them effective immediately upon publication, for the following reasons:

1. The implementation plans were prepared, adopted, and submitted by the States, and reviewed and evaluated by the Administrator pursuant to 40 CFR Part 51, which, prior to promulgation, had been published as a notice of proposed rule-making for comment by interested persons, and

2. The approved implementation plan provisions were adopted in accordance with procedural requirements of State and Federal law, which provided for adequate public participation through notice, public hearings, and time for comment, and consequently further public participation is unnecessary.

(42 U.S.C. 1857c-5)

Dated: May 26, 1972.

WILLIAM D. RUCKELSHAUS,
Administrator.

NOTE: Incorporation by reference provisions approved by the Director of the Federal Register on May 18, 1972.

Part 52 of Chapter I of Title 40 of the Code of Federal Regulations is amended by redesignating existing § 52.1 as new Subpart EEE, § 52.2850 and by adding new Subparts A-DDD as follows:

Subpart A—General Provisions

§ 52.01 Definitions.

All terms used in this part but not defined herein shall have the meaning given them in the Clean Air Act and in Part 51 of this chapter.

§ 52.02 Introduction.

(a) This part sets forth the Administrator's approval and disapproval of State plans and the Administrator's promulgation of such plans or portions thereof. Approval of a plan or any portion thereof is based upon a determination by the Administrator that such plan or portion meets the requirements of section 110 of the Act and the provisions of Part 51 of this chapter.

(b) Any plan or portion thereof promulgated by the Administrator substitutes for a State plan or portion thereof disapproved by the Administrator or not submitted by a State, or supplements a State plan or portion thereof. The promulgated provisions, together with any portions of a State plan approved by the Administrator, constitute the applicable plan for purposes of the Act.

(c) Where nonregulatory provisions of a plan are disapproved, the disapproval is noted in this part and a detailed evaluation is provided to the State, but no substitute provisions are promulgated by the Administrator.

(d) All approved regulatory provisions of each plan are incorporated by reference in this part. Regulatory provisions of a plan approved or promulgated by the Administrator are enforceable by the Administrator and the State, and by local agencies in accordance with their assigned responsibilities under the plan.

(e) Each State's plan is dealt with in a separate subpart, which includes an introductory section identifying the plan by name and the date of its submittal, a section classifying regions, and a section setting forth dates for attainment of the national standards. Additional sections are included as necessary to specifically identify disapproved provisions, to set forth reasons for disapproval, and to set forth provisions of the plan promulgated by the Administrator.

(f) Revisions to applicable plans will be included in this part when approved or promulgated by the Administrator.

§ 52.03 Extensions.

Each subpart includes the Administrator's determination with respect to any request under section 110(b) of the Act for an extension of the deadline for submitting that portion of a plan which implements a secondary standard or any request under section 110(e) of the Act for an extension of the 3-year deadline for attainment of a primary standard.

§ 52.04 Classification of regions.

Each subpart sets forth the priority classification, by pollutant, for each region in the State. Each plan for each region was evaluated according to the requirements of Part 51 of this chapter applicable to regions of that priority.

§ 52.05 Public availability of emission data.

Each subpart sets forth the Administrator's disapproval of plan procedures for making emission data available to the public after correlation with applicable emission limitations, and includes the promulgation of requirements that sources report emission data to the Administrator for correlation and public disclosure.

§ 52.06 Legal authority.

(a) The Administrator's determination of the absence or inadequacy of legal authority required to be included in a plan is set forth in each subpart. This includes the legal authority of local agencies and State governmental agencies other than an air pollution control agency if such other agencies are assigned responsibility for carrying out a plan or portion thereof.

(b) No legal authority as such is promulgated by the Administrator. Where required regulatory provisions are not included in the plan by the State because of inadequate legal authority, substitute provisions are promulgated by the Administrator.

(c) Where a State plan did not clearly set forth a timetable for obtaining legal authority to establish transportation or land-use controls necessary to attain